

ValleyRegional Transit East-West Commute Corridors Alternative Transportation Package Cost/Benefit Analysis

7 Percent Discount Rate

	Total Cost/Benefit			Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Cost	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
I. Park & Ride System	\$4,000,000	\$64,953,850	\$60,953,850	X	\$51,326,015	X	\$6,048,580	X	\$7,248,348	X	\$330,908	X			
II. West Ada/Canyon PT Hubs	\$5,026,000	\$35,738,219	\$30,712,219	X	\$28,859,584	X	\$857,021	X	\$5,526,908	X	\$494,707	X			
III. Canyon County Operations Facility	\$1,250,000	\$1,251,421	\$1,421					X	\$556,522	X	\$694,899				
IV. Ada County CNG Facility Upgrade	\$600,000	\$331,657	-\$268,343					X	\$267,130	X	\$49,636			X	\$14,891
V. VRT/COMPASS Operations Center	\$1,296,000	\$2,736,238	\$1,440,238					X	\$577,002	X	\$2,159,236				
VI. Canyon County Bus Replacement	\$2,521,544	\$2,938,236	\$416,692	X	\$34,831			X	\$1,122,635	X	\$1,570,580			X	\$210,190
VII. Ada County Bus Replacement	\$995,380	\$863,432	-\$131,948					X	\$443,160	X	\$267,203			X	\$153,069
VIII. Ustick Pilot Project	\$950,000	\$8,964,214	\$8,014,214	X	\$7,590,507	X	\$619,565	X	\$1,201,946	X	\$171,762	X			
IX. Garden City Pilot Project	\$450,000	\$5,450,877	\$5,000,877	X	\$288,497	X	\$288,497	X	\$686,985	X	\$81,361	X			
X. Parma, Greenleaf, Wilder Pilot Project	\$326,136	\$1,003,529	\$677,393	X	\$4,150,906	X	\$294,374	X	\$650,189	X	\$58,966	X			
XI. Buses For Pilot Projects	\$1,650,000	\$1,405,237	-\$244,763					X	\$734,609	X	\$670,628				
XII. High Capacity Alternatives Analysis	\$5,500,000	\$6,381,540	\$881,540					X	\$5,387,130	X	\$994,410				
Project Administration & Oversight	\$1,215,753														
TOTAL	\$25,780,813	\$136,219,853	\$110,439,040		\$92,250,339		\$8,108,037		\$24,402,564		\$7,544,296		\$4,201,402		\$378,150

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3 Percent Discount Rate

	Total Cost/Benefit			Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Cost	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
I. Park & Ride System	\$4,000,000	\$101,030,335	\$97,030,335	X	\$81,070,932	X	\$9,553,908	X	\$9,882,817	X	\$522,678	X			
II. West Ada/Canyon PT Hubs	\$5,026,000	\$54,618,671	\$49,592,671	X	\$45,584,551	X	\$1,353,689	X	\$6,899,027	X	\$781,404	X			
III. Canyon County Operations Facility	\$1,250,000	\$1,654,135	\$404,135					X	\$556,522	X	\$1,097,614				
IV. Ada County CNG Facility Upgrade	\$600,000	\$369,053	-\$230,947					X	\$267,130	X	\$78,402			X	\$23,521
V. VRT/COMPASS Operations Center	\$1,296,000	\$3,987,578	\$2,691,578					X	\$577,002	X	\$3,410,577				
VI. Canyon County Bus Replacement	\$2,521,544	\$3,314,025	\$792,481	X	\$41,828			X	\$1,122,635	X	\$1,891,784			X	\$257,778
VII. Ada County Bus Replacement	\$995,380	\$969,857	-\$25,523					X	\$443,160	X	\$334,866			X	\$191,831
VIII. Ustick Pilot Project	\$950,000	\$10,135,580	\$9,185,580	X	\$8,033,218	X	\$655,701	X	\$1,264,882	X	\$181,780	X			
IX. Garden City Pilot Project	\$450,000	\$5,459,889	\$5,009,889	X	\$4,650,313	X	\$305,324	X	\$723,470	X	\$86,106	X			
X. Parma, Greenleaf, Wilder Pilot Project	\$326,136	\$5,451,481	\$5,125,345	X	\$4,393,005	X	\$311,543	X	\$684,527	X	\$62,405	X			
XI. Buses For Pilot Projects	\$1,650,000	\$1,559,989	-\$90,011					X	\$734,609	X	\$825,380				
XII. High Capacity Alternatives Analysis	\$5,500,000	\$6,439,539	\$939,539					X	\$5,387,130	X	\$1,052,408				
Project Administration & Oversight	\$1,215,753														
TOTAL	\$25,780,813	\$194,990,133	\$169,209,320		\$143,773,848		\$12,180,165		\$28,542,911		\$10,325,404		\$6,385,025		\$473,129

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<p>In addition to the monetary benefits of the East - West Commute Alternative Transportation Project, there are numerous benefits that are not quantifiable.</p> <p>This package of projects will put in place the infrastructure and services necessary for alternative transportation in the Treasure Valley for the next 30 years. The work immediately generate by this project will stimulate the regional economy now. The end result of this project will be the infrastructure needed for an alternative transportation system which will attract new business and residents, helping the area to continue to grow.</p>	<p>The Treasure Valley airshed is bordering on non-attainment for ozone and has a problem with particulates. This package of projects will provide significant pollution savings in the short term and long term by allowing for expansion of HOV use for many years into the future.</p>	<p>By increasing HOV use, particularly on long commutes and in areas that currently does not have transit service or alternative transportation facilities, this package of projects will provide residents throughout Treasure Valley an opportunity to reduce their fuel costs.</p>	<p>This package of project will enhance the communities in the Treasure Valley in many ways.</p> <p>The new routes will provide service to communities which previously did not have service.</p> <p>The Park & Ride System and Transit Facilities will provide a community transportation focal point.</p> <p>The operations facilities will provide additional pass sales locations.</p> <p>The High Capacity Corridor Analysis will lay the ground work for transportation and land use development for the next 30 years.</p> <p>The package of projects will create and maintain hundreds of jobs in the community.</p>	<p>Because VRT's funding structure results in such limited general funds, any savings in this area is a significant benefit.</p> <p>Savings will be used to operate and maintain the new facilities and services and to add new service.</p> <p>Carpool, vanpool and transit riders will benefit from the time they driving during their commute.</p>	<p>This package of projects will improve the safety of residents, automobile drivers, transit drivers, buses, and maintenance facilities.</p> <p>The new maintenance facility and upgraded CNG facility will provide state of the art equipment and enough room for staff to function safely.</p> <p>The new vehicles will have less mechanical breakdowns which will reduce the potential for accidents.</p> <p>The new Park & Rides, Transit Facilities and service will increase HOV use and reduce traffic along major corridors in the Valley.</p> <p>This calculation was completed for the package of projects as a whole which will result in 81,480 miles of travel eliminated daily. This reduction was factored into the crash data for the east/west corridor and the corresponding cost for crash type to calculate the safety benefit of this project.</p>	<p>These projects will benefit maintenance in two main ways. First, the amount of vehicle maintenance required will be substantially reduced. Second, the new maintenance shop and equipment in Canyon County will provide staff with the tools and setting needed to work most cost effectively, thereby reducing maintenance costs.</p> <p>VRT currently has the only CNG fueling facility in the region. Without a back-up location available, maintaining and upgrading the CNG facility is essential to keeping the fleet operating.</p>
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VRT TIGER GRANT COST/BENEFIT ANALYSIS

I. Park & Ride System

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$4,000,000	\$64,953,850	\$60,953,850	X	\$51,326,015	X	\$6,048,580	X	\$7,248,348	X	\$330,908				

# of new lots	15	# of new lots	15	# of bus passengers	120	Project cost	\$4,000,000
# of cars per lot	30	# of cars per lot	30	# of vanpool passengers	165	Local percentage	20%
Total # of cars	450	Total # of cars	450	# of carpool passengers	75		
# of P&R served by CNG buses	7	# of P&R served by CNG buses	7	Total # passengers	360	General funds benefit	\$800,000
# of people in CNG bus per P&R	8	# of people in CNG bus per P&R	8	Average commute time	0.75	Life of project	30
Total # of people in CNG buses	56	Total # of P&R people in CNG buses	56	Commute days per year	256	Annual \$ general funds benefit	\$26,667
# of P&R served by CD buses	8	# of P&R served by CD buses	8	Total time not spent driving	34560		
# of people in CD buses per P&R	8	# of people in CD buses per P&R	8	\$ hours travel time savings	\$10.60	Discount rate	7%
Total # of people in CD buses	64	Total # of P&R people in CD buses	64	Annual \$ time not spent driving	\$366,336	Present value general funds benefit	\$330,908
# of P&R served by vanpools	15	# of P&R served by vanpools	15	Life of project	30		
# of people in vanpools per P&R	12	# of people in vanpools per P&R	12	Value of time not spent driving	\$10,990,080		
Total # of people in vanpools	180	Total # of P&R people in vanpools	180				
# of P&R served by carpools	15	# of P&R served by carpools	15	# short term jobs created/preserved	43		
# of people in carpools per P&R	10	# of people in carpools per P&R	10	average wage per short term job	\$20		
Total # of people in carpools	150	Total # of people in carpools	150	Length of short term job	1		
Average round trip length in miles	40	Average round trip length in miles	40	\$ of short term job	\$1,780,870		
Commute days per year	256	Commute day per year	256				
				# long term jobs created/preserved	1		
Organic compounds emission per car per	0.0000015	Miles per gallon per car	24.00	average wage per long term job	\$15		
Total Organic compounds emission	7.1110656	Cost per mile per car	\$0.14	Length of long term job	30		
\$ Organic compounds for cars	\$12,089	\$ of gasoline used by drivers	\$639,360	\$ of long term job	\$921,600		
Organic compounds emission per CNG bus	0.0000014330	Miles per gallon per CNG bus	2.5095	Total travel time benefit	\$13,692,549.57		
Total capacity	40	Cost per mile per CNG bus	\$0.17				
Organic compounds emission per CNG rider	0.000000358	Total Capacity	40	Discount rate	7%		
Total organic carbon emission for CNG bus	0.0205434880	Cost per mile per person on CNG bus	\$0.0043	Present value of time not driving	\$4,545,879		
Cost per ton Organic compounds for CNG	\$35	Cost of CNG used by CNG bus riders	\$2,456.46				
Organic compounds emission per CD bus	0.0000005512			Total Community Enhancement Benefit	\$7,248,348		
Total capacity	40	Miles per gallon per CD bus	2.9				
Organic compounds emission per CD rider	0.000000138	Cost per mile per CD bus	\$1.20				
Total Organic compounds emission	0.0090308608	Total Capacity	40				
Cost Organic compounds for CD	\$15	Cost per mile per person on CD bus	\$0.03				
Organic compounds per vanpool	0.0000009921	Cost of CD used by CD bus riders	\$19,660.80				
Organic compounds per person in vanpool	0.0000000827						
Total Organic compounds per	0.1523865600	Miles per gallon per vanpool	22				
Cost Organic compounds for	\$259	Cost per mile per vanpool	\$0.15				
Organic compounds per carpool	0.0000015432	Total Capacity	12				

Organic compounds per carpooler	0.000007716	Cost per mile per vanpooler	\$0.01
Total Organic compounds per	1.1851776	Cost of gasoline used by vanpoolers	\$23,249
Cost organic carbon for carpoolers	\$2,015		
Value of Organic compounds savings	\$9,765	Miles per gallon per carpool	24
		Cost per mile per carpool	\$0.14
Nitrogen Oxides emission per car per	0.0000013227	Total Capacity	2
Total Nitrogen Oxides emission for people in	6	Cost per mile per carpooler	\$0.07
Cost per ton Nitrogen Oxides for cars	\$24,380	Cost of gasoline used by carpoolers	\$106,560
Nitrogen Oxides emission per CNG bus	0.0000165346		
Total Capacity	40	Annual Fuel Benefit	\$487,433
Nitrogen Oxides emission per CNG rider	0.0000004134	Life of project	30
Total organic carbon emission for P&R riders	0.2370400256	Total Fuel Benefit	\$14,622,999
Cost per ton Nitrogen Oxides for CNG rider	\$948		
Nitrogen Oxides emission per CD bus	0.0000352739	Discount rate	7%
Total Capacity	40	Present value fuel savings benefit	\$6,048,580
Nitrogen Oxides emission per CD rider	0.0000008818		
Total Nitrogen Oxides emission for CD bus	0.5779275776		
Cost per ton Nitrogen Oxides for CD rider	\$2,312		
Nitrogen Oxides per vanpool	0.0000229280		
Nitrogen Oxides per person in vanpool	0.0000019107		
Total Nitrogen Oxides for P&R vanpoolers	3.5217408000		
Cost Nitrogen Oxides for vanpool riders	\$14,087		
Nitrogen Oxides per carpool	0.0000012000		
Nitrogen Oxides per carpooler	0.0000013227		
Total Nitrogen Oxides per carpooler	2.0316672000		
Cost Nitrogen Oxides for carpoolers	\$8,127		
Value of Nitrogen Oxides savings	-\$1,093		
Particulate Matter emission per car per	0.0000055116		
Total Particulate Matter emission for people in	25.3974528000		
Cost per ton Particulate Matter for cars	\$4,266,772		
Particulate Matter emission per CNG bus	0.0000000220		
Total Capacity	40		
Particulate Matter emission per CNG rider	0.0000000006		
Total organic carbon emission for P&R riders	0.0003153920		
Cost per ton Particulate Matter for CNG rider	\$53		
Particulate Matter emission per CD bus	0.0000000154		
Total Capacity	40		
Particulate Matter emission per CD rider	0.0000000004		
Total Particulate Matter emission for CD bus	0.0002523136		
Cost per ton Particulate Matter for CD rider	\$42		
Particulate Matter per vanpool	0.0000055116		

Particulate Matter per person in vanpool	0.0000045930
Total Particulate Matter for vanpoolers	0.8465817600
Cost Particulate Matter for vanpoolers rider	\$142,226
Particulate Matter per carpool	0.000000022
Particulate Matter per carpooler	0.000000011
Total Particulate Matter for carpoolers	0.0016896000
Cost Particulate Matter for carpoolers	\$284
Value of Particulate Matter savings	\$4,124,167
Carbon Dioxide per car per mile	0.0004580000
Total Carbon Dioxide emission for people in	2110.4640000000
Cost per ton Carbon Dioxide for cars	\$4,221
Carbon Dioxide emission per CNG bus	0.0000022046
Total Capacity	40
Carbon Dioxide emission per CNG rider	0.0000000551
Total Carbon Dioxide emission for P&R riders	0.0316051456
Cost per ton Carbon Dioxide for CNG rider	\$0
Carbon Dioxide emission per CD bus	0.0000029762
Total Capacity	40
Carbon Dioxide emission per CD rider	0.0000000744
Total Carbon Dioxide emission for CD bus	0.0487620608
Cost per ton Carbon Dioxide for CD rider	\$0
Carbon Dioxide per vanpool	0.0005750000
Carbon Dioxide per person in vanpool	0.0000479167
Total Carbon Dioxide for P&R vanpoolers	88.3200000000
Cost Carbon Dioxide for vanpool riders	\$177
Carbon Dioxide per carpool	0.0004580000
Carbon Dioxide per carpooler	0.0002290000
Total Carbon Dioxide for carpoolers	352
Cost Carbon Dioxide for carpoolers	\$703
Value of Carbon Dioxide savings	\$3,341
Annual Pollution Benefit	\$4,136,179
Life of project	30
Total pollution benefit	\$124,085,368
Discount rate	7%
Present value pollution benefit	\$51,326,015

VRT TIGER GRANT COST/BENEFIT ANALYSIS

I. Park & Ride System

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$4,000,000	\$101,030,335	\$97,030,335	X	\$81,070,932	X	\$9,553,908	X	\$9,882,817	X	\$522,678				

# of new lots	15	# of new lots	15	# of bus passengers	120	Project cost	\$4,000,000
# of cars per lot	30	# of cars per lot	30	# of vanpool passengers	165	Local percentage	20%
Total # of cars	450	Total # of cars	450	# of carpool passengers	75		
# of P&R served by CNG buses	7	# of P&R served by CNG buses	7	Total # passengers	360	General funds benefit	\$800,000
# of people in CNG bus per P&R	8	# of people in CNG bus per P&R	8	Average commute time	0.75	Life of project	30
Total # of people in CNG buses	56	Total # of P&R people in CNG buses	56	Commute days per year	256	Annual \$ general funds benefit	\$26,667
# of P&R served by CD buses	8	# of P&R served by CD buses	8	Total time not spent driving	34560		
# of people in CD buses per P&R	8	# of people in CD buses per P&R	8	\$ hours travel time savings	\$10.60	Discount rate	3%
Total # of people in CD buses	64	Total # of P&R people in CD buses	64	Annual \$ time not spent driving	\$366,336	Present value general funds benefit	\$522,678
# of P&R served by vanpools	15	# of P&R served by vanpools	15	Life of project	30		
# of people in vanpools per P&R	12	# of people in vanpools per P&R	12	Value of time not spent driving	\$10,990,080		
Total # of people in vanpools	180	Total # of P&R people in vanpools	180				
# of P&R served by carpools	15	# of P&R served by carpools	15	# short term jobs created/preserved	43		
# of people in carpools per P&R	10	# of people in carpools per P&R	10	average wage per short term job	\$20		
Total # of people in carpools	150	Total # of people in carpools	150	Length of short term job	1		
Average round trip length in miles	40	Average round trip length in miles	40	\$ of short term job	\$1,780,870		
Commute days per year	256	Commute day per year	256				
				# long term jobs created/preserved	1		
Organic compounds emission per car per	0.0000015	Miles per gallon per car	24.00	average wage per long term job	\$15		
Total Organic compounds emission	7.1110656	Cost per mile per car	\$0.14	Length of long term job	30		
\$ Organic compounds for cars	\$12,089	\$ of gasoline used by drivers	\$639,360	\$ of long term job	\$921,600		
Organic compounds emission per CNG bus	0.0000014330	Miles per gallon per CNG bus	2.5095	Total travel time benefit	\$13,692,549.57		
Total capacity	40	Cost per mile per CNG bus	\$0.17				
Organic compounds emission per CNG rider	0.000000358	Total Capacity	40	Discount rate	3%		
Total organic carbon emission for CNG bus	0.0205434880	Cost per mile per person on CNG bus	\$0.0043	Present value of time not driving	\$7,180,347		
Cost per ton Organic compounds for CNG	\$35	Cost of CNG used by CNG bus riders	\$2,456.46				
Organic compounds emission per CD bus	0.0000005512			Total Community Enhancement Benefit	\$9,882,817		
Total capacity	40	Miles per gallon per CD bus	2.9				
Organic compounds emission per CD rider	0.000000138	Cost per mile per CD bus	\$1.20				
Total Organic compounds emission	0.0090308608	Total Capacity	40				
Cost Organic compounds for CD	\$15	Cost per mile per person on CD bus	\$0.03				
Organic compounds per vanpool	0.0000009921	Cost of CD used by CD bus riders	\$19,660.80				
Organic compounds per person in vanpool	0.000000827						
Total Organic compounds per	0.1523865600	Miles per gallon per vanpool	22				
Cost Organic compounds for	\$259	Cost per mile per vanpool	\$0.15				
Organic compounds per carpool	0.0000015432	Total Capacity	12				

Organic compounds per carpooler	0.000007716	Cost per mile per vanpooler	\$0.01
Total Organic compounds per	1.1851776	Cost of gasoline used by vanpoolers	\$23,249
Cost organic carbon for carpoolers	\$2,015		
Value of Organic compounds savings	\$9,765	Miles per gallon per carpool	24
		Cost per mile per carpool	\$0.14
Nitrogen Oxides emission per car per	0.0000013227	Total Capacity	2
Total Nitrogen Oxides emission for people in	6	Cost per mile per carpooler	\$0.07
Cost per ton Nitrogen Oxides for cars	\$24,380	Cost of gasoline used by carpoolers	\$106,560
Nitrogen Oxides emission per CNG bus	0.0000165346		
Total Capacity	40	Annual Fuel Benefit	\$487,433
Nitrogen Oxides emission per CNG rider	0.0000004134	Life of project	30
Total organic carbon emission for P&R riders	0.2370400256	Total Fuel Benefit	\$14,622,999
Cost per ton Nitrogen Oxides for CNG rider	\$948		
Nitrogen Oxides emission per CD bus	0.0000352739	Discount rate	3%
Total Capacity	40	Present value fuel savings benefit	\$9,553,908
Nitrogen Oxides emission per CD rider	0.0000008818		
Total Nitrogen Oxides emission for CD bus	0.5779275776		
Cost per ton Nitrogen Oxides for CD rider	\$2,312		
Nitrogen Oxides per vanpool	0.0000229280		
Nitrogen Oxides per person in vanpool	0.0000019107		
Total Nitrogen Oxides for P&R vanpoolers	3.5217408000		
Cost Nitrogen Oxides for vanpool riders	\$14,087		
Nitrogen Oxides per carpool	0.0000012000		
Nitrogen Oxides per carpooler	0.0000013227		
Total Nitrogen Oxides per carpooler	2.0316672000		
Cost Nitrogen Oxides for carpoolers	\$8,127		
Value of Nitrogen Oxides savings	-\$1,093		
Particulate Matter emission per car per	0.0000055116		
Total Particulate Matter emission for people in	25.3974528000		
Cost per ton Particulate Matter for cars	\$4,266,772		
Particulate Matter emission per CNG bus	0.0000000220		
Total Capacity	40		
Particulate Matter emission per CNG rider	0.0000000006		
Total organic carbon emission for P&R riders	0.0003153920		
Cost per ton Particulate Matter for CNG rider	\$53		
Particulate Matter emission per CD bus	0.0000000154		
Total Capacity	40		
Particulate Matter emission per CD rider	0.0000000004		
Total Particulate Matter emission for CD bus	0.0002523136		
Cost per ton Particulate Matter for CD rider	\$42		
Particulate Matter per vanpool	0.0000055116		

Particulate Matter per person in vanpool	0.0000045930
Total Particulate Matter for vanpoolers	0.8465817600
Cost Particulate Matter for vanpoolers rider	\$142,226
Particulate Matter per carpool	0.000000022
Particulate Matter per carpooler	0.000000011
Total Particulate Matter for carpoolers	0.0016896000
Cost Particulate Matter for carpoolers	\$284
Value of Particulate Matter savings	\$4,124,167
Carbon Dioxide per car per mile	0.0004580000
Total Carbon Dioxide emission for people in	2110.4640000000
Cost per ton Carbon Dioxide for cars	\$4,221
Carbon Dioxide emission per CNG bus	0.0000022046
Total Capacity	40
Carbon Dioxide emission per CNG rider	0.0000000551
Total Carbon Dioxide emission for P&R riders	0.0316051456
Cost per ton Carbon Dioxide for CNG rider	\$0
Carbon Dioxide emission per CD bus	0.0000029762
Total Capacity	40
Carbon Dioxide emission per CD rider	0.0000000744
Total Carbon Dioxide emission for CD bus	0.0487620608
Cost per ton Carbon Dioxide for CD rider	\$0
Carbon Dioxide per vanpool	0.0005750000
Carbon Dioxide per person in vanpool	0.0000479167
Total Carbon Dioxide for P&R vanpoolers	88.3200000000
Cost Carbon Dioxide for vanpool riders	\$177
Carbon Dioxide per carpool	0.0004580000
Carbon Dioxide per carpooler	0.0002290000
Total Carbon Dioxide for carpoolers	352
Cost Carbon Dioxide for carpoolers	\$703
Value of Carbon Dioxide savings	\$3,341
Annual Pollution Benefit	\$4,136,179
Life of project	30
Total pollution benefit	\$124,085,368
Discount rate	3%
Present value pollution benefit	\$81,070,932

VRT TIGER GRANT COST/BENEFIT ANALYSIS

II. West Ada/Canyon PT Hubs

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$5,026,000	\$35,738,219	\$30,712,219	X	\$28,859,584	X	\$857,021	X	\$5,526,908	X	\$494,707				

# of new lots	5	# of new lots	5	# of bus passengers	75	Project cost	\$5,980,000
# of cars per lot	50	# of cars per lot	25	# of vanpool passengers	55	Local percentage	20%
Total # of cars	250	Total # of cars	125	# of carpool passengers	58	General funds benefit	\$1,196,000
# of P&R served by CNG buses	1	# of P&R served by CNG buses	1	Total # passengers	188	Life of project	30
# of people in CNG bus per P&R	15	# of people in CNG bus per P&R	15	Average commute time	0.75	Annual \$ general funds benefit	\$39,867
Total # of people in CNG buses	15	Total # of people in CNG buses	15	Commute days per year	256		
# of P&R served by CD buses	4	# of P&R served by CD buses	4	Total time not spent driving	18000	Discount rate	7%
# of people in CD buses per P&R	15	# of people in CD buses per P&R	15	\$ hours travel time savings	\$10.60	Present value general funds benefit	\$494,707
Total # of people in CD buses	60	Total # of people in CD buses	60	Annual \$ hours travel time savings	\$190,800		
# of P&R served by vanpools	5	# of P&R served by vanpools	5	Life of project	30		
# of people in vanpools per P&R	12	# of people in vanpools per P&R	12	Value of time not spent driving	\$5,724,000		
Total # of people in vanpools	60	Total # of people in vanpools	60				
# of P&R served by carpools	5	# of P&R served by carpools	5	# short term jobs created/preserved	55		
# of people in carpools per P&R	23	# of people in carpools per P&R	23	average wage per short term job	\$20		
Total # of people in carpools	115	Total # of people in carpools	115	Length of short term job	1		
Average round trip length in miles	40	Average round trip length in miles	40	\$ of short term job	\$2,237,663		
Commute days per year	256	Commute day per year	256				
				# long term jobs created/preserved	1		
Organic compounds emission per car per mile	0.0000015432	Miles per gallon per car	24	average wage per long term job	\$15		
Total Organic compounds emission for people in cars	3.9505920000	Cost per mile per car	\$0.14	Length of long term job	30		
Cost Organic compounds for cars	\$6,716	Cost of gasoline used by drivers	\$177,600	\$ of long term job	\$921,600		
Organic compounds emission per CNG bus	0.0000014330	Miles per gallon per CNG bus	2.5095	Total travel time benefit	\$8,883,262.61		
Total capacity	40	Cost per mile per CNG bus	\$0.17				
Organic compounds emission per CNG	0.000000358	Total Capacity	40	Discount rate	7%		
Total organic carbon emission for CNG bus riders	0.0055027200	Cost per mile per person on CNG bus	\$0.0043	PV of time not driving	\$2,367,645		
Cost per ton Organic compounds for CNG	\$9	Cost of CNG used by CNG bus riders	\$657.98				
Organic compounds emission per CD bus	0.0000005512						
Total capacity	40	Miles per gallon per CD bus	2.9	Total Community Enhancement Benefit	\$5,526,908		
Organic compounds emission per CD rider	0.000000138	Cost per mile per CD bus	\$1.20				
Total Organic compounds emission for CD bus	0.0084664320	Total Capacity	40				
Cost Organic compounds for CD	\$14	Cost per mile per person on CD bus	\$0.03				
Organic compounds per vanpool	0.0000009921	Cost of CD used by CD bus riders	\$18,432.00				
Organic compounds per vanpooler	0.0000000827						
Total Organic compounds for	0.0507955200	Miles per gallon per vanpool	22				
Cost organic carbon for vanpoolers	\$86.35	Cost per mile per vanpool	\$0.15				
Organic compounds per carpool	0.0000015432	Total Capacity	12				
Organic compounds per carpooler	0.0000007716	Cost per mile per vanpooler	\$0.01				

Total Organic compounds per	0.9086361600	Cost of gasoline used by vanpoolers	\$7,750
Cost organic carbon for carpools	\$1,545		
Value of Organic compounds savings	\$5,061	Miles per gallon per carpool	24
		Cost per mile per carpool	\$0.14
Nitrogen Oxides emission per car per	0.0000013227	Total Capacity	2
Total Nitrogen Oxides emission for people in	3.3861120000	Cost per mile per carpooler	\$0.07
Cost per ton Nitrogen Oxides for cars	\$13,544	Cost of gasoline used by carpools	\$81,696
Nitrogen Oxides emission per CNG bus	0.0000165346		
Total Capacity	40	Fuel benefit	\$69,064
Nitrogen Oxides emission per CNG	0.0000004134	Life of project	30
Total organic carbon emission for CNG bus	0.0634928640	Total fuel benefit	\$2,071,926
Cost per ton Nitrogen Oxides for CNG rider	\$253.97		
Nitrogen Oxides emission per CD bus	0.0000352739	Discount rate	7%
Total Capacity	40	Present value fuel savings benefit	\$857,021
Nitrogen Oxides emission per CD rider	0.0000008818		
Total Nitrogen Oxides emission for CD bus	0.5418071040		
Cost per ton Nitrogen Oxides for CD rider	\$2,167.23		
Nitrogen Oxides per vanpool	0.0000229280		
Nitrogen Oxides per vanpooler	0.0000019107		
Total Nitrogen Oxides for vanpoolers	1.1739136000		
Cost Nitrogen Oxides for vanpoolers	\$4,696		
Nitrogen Oxides per carpool	0.0000012000		
Nitrogen Oxides per carpooler	0.0000006000		
Total Nitrogen Oxides per carpooler	0.7065600000		
Cost Nitrogen Oxides for carpools	\$2,826		
Value of Nitrogen Oxides savings	\$3,601		
Particulate matter emission per car per	0.0000055116		
Total Particulate Matter emission for	14.109696		
Cost per ton			
Particulate Matter for	\$2,370,429		
Particulate Matter emission per CNG bus	0.0000059524		
Total Capacity	40		
Particulate matter emission per CNG	0.0000001488		
Total organic carbon emission for CNG bus	0.0228571429		
Cost per ton			
Particulate Matter for CNG rider	\$3,840		
Particulate Matter emission per CD bus	0.0000000154		
Total Capacity	40		
Particulate Matter emission per CD rider	0.0000000004		
Total Particulate Matter emission for	0.0002365440		
Cost per ton			
Particulate Matter for CD rider	\$40		
Particulate Matter per vanpool	0.0000055116		
Particulate Matter per vanpooler	0.0000004593		
Total Particulate Matter for vanpoolers	0.2821939200		
Cost Particulate Matter for vanpoolers	\$47,409		

Particulate Matter per carpool	0.000000002
Particulate Matter per carpooler	0.000000001
Total Particulate Matter for carpoolers	0.0001177600
Cost Particulate Matter for carpoolers	\$20
Value of Particulate Matter savings	\$2,319,121
Carbon Dioxide emission per car per mile	0.0004580000
Total Carbon Dioxide emission for people in cars	1172.4800000000
Cost per ton Carbon Dioxide for cars	\$2,345
Carbon Dioxide emission per CNG bus	0.5000000000
Total Capacity	40
Carbon Dioxide emission per CNG rider	0.0125000000
Total Carbon Dioxide emission for CNG bus	1920
Cost per ton Carbon Dioxide for CNG rider	\$3,840
Carbon Dioxide emission per CD bus	0.0000029762
Total Capacity	40
Carbon Dioxide emission per CD rider	0.000000744
Total Carbon Dioxide emission for CD bus	0.045714432
Cost per ton Carbon Dioxide for CD rider	\$0
Carbon Dioxide per vanpool	0.0005750000
Carbon Dioxide per vanpooler	0.0000479167
Total Carbon Dioxide for vanpoolers	29.4400000000
Cost Carbon Dioxide for vanpoolers	\$59
Carbon Dioxide per carpool	0.0004580000
Carbon Dioxide per carpooler	0.0002290000
Total Carbon Dioxide for carpoolers	270
Cost Carbon Dioxide for carpoolers	\$539
Value of Carbon Dioxide savings	-\$2,093
Pollution benefit	\$2,325,690
Life of project	30
Total pollution benefit	\$69,770,702
Discount rate	7%
Present value pollution benefit	\$28,859,584

VRT TIGER GRANT COST/BENEFIT ANALYSIS

II. West Ada/Canyon PT Hubs

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$5,026,000	\$54,618,671	\$49,592,671	X	\$45,584,551	X	\$1,353,689	X	\$6,899,027	X	\$781,404				

# of new lots	5	# of new lots	5	# of bus passengers	75	Project cost	\$5,980,000
# of cars per lot	50	# of cars per lot	25	# of vanpool passengers	55	Local percentage	20%
Total # of cars	250	Total # of cars	125	# of carpool passengers	58	General funds benefit	\$1,196,000
# of P&R served by CNG buses	1	# of P&R served by CNG buses	1	Total # passengers	188	Life of project	30
# of people in CNG bus per P&R	15	# of people in CNG bus per P&R	15	Average commute time	0.75	Annual \$ general funds benefit	\$39,867
Total # of people in CNG buses	15	Total # of people in CNG buses	15	Commute days per year	256		
# of P&R served by CD buses	4	# of P&R served by CD buses	4	Total time not spent driving	18000	Discount rate	3%
# of people in CD buses per P&R	15	# of people in CD buses per P&R	15	\$ hours travel time savings	\$10.60	Present value general funds benefit	\$781,404
Total # of people in CD buses	60	Total # of people in CD buses	60	Annual \$ hours travel time savings	\$190,800		
# of P&R served by vanpools	5	# of P&R served by vanpools	5	Life of project	30		
# of people in vanpools per P&R	12	# of people in vanpools per P&R	12	Value of time not spent driving	\$5,724,000		
Total # of people in vanpools	60	Total # of people in vanpools	60				
# of P&R served by carpools	5	# of P&R served by carpools	5	# short term jobs created/preserved	55		
# of people in carpools per P&R	23	# of people in carpools per P&R	23	average wage per short term job	\$20		
Total # of people in carpools	115	Total # of people in carpools	115	Length of short term job	1		
Average round trip length in miles	40	Average round trip length in miles	40	\$ of short term job	\$2,237,663		
Commute days per year	256	Commute day per year	256				
				# long term jobs created/preserved	1		
Organic compounds emission per car per mile	0.0000015432	Miles per gallon per car	24	average wage per long term job	\$15		
Total Organic compounds emission for people in cars	3.9505920000	Cost per mile per car	\$0.14	Length of long term job	30		
Cost Organic compounds for cars	\$6,716	Cost of gasoline used by drivers	\$177,600	\$ of long term job	\$921,600		
Organic compounds emission per CNG bus	0.0000014330	Miles per gallon per CNG bus	2.5095	Total travel time benefit	\$8,883,262.61		
Total capacity	40	Cost per mile per CNG bus	\$0.17				
Organic compounds emission per CNG	0.000000358	Total Capacity	40	Discount rate	3%		
Total organic carbon emission for CNG bus riders	0.0055027200	Cost per mile per person on CNG bus	\$0.0043	Present value of time not driving	\$3,739,764		
Cost per ton Organic compounds for CNG	\$9	Cost of CNG used by CNG bus riders	\$657.98				
Organic compounds emission per CD bus	0.0000005512			Total Community Enhancement Benefit	\$6,899,027		
Total capacity	40	Miles per gallon per CD bus	2.9				
Organic compounds emission per CD rider	0.000000138	Cost per mile per CD bus	\$1.20				
Total Organic compounds emission for CD bus	0.0084664320	Total Capacity	40				
Cost Organic compounds for CD	\$14	Cost per mile per person on CD bus	\$0.03				
Organic compounds per vanpool	0.0000009921	Cost of CD used by CD bus riders	\$18,432.00				
Organic compounds per vanpooler	0.000000827						
Total Organic compounds for	0.0507955200	Miles per gallon per vanpool	22				
Cost organic carbon for vanpoolers	\$86.35	Cost per mile per vanpool	\$0.15				
Organic compounds per carpool	0.0000015432	Total Capacity	12				
Organic compounds per carpooler	0.0000007716	Cost per mile per vanpooler	\$0.01				

Total Organic compounds per carpooler	0.9086361600	Cost of gasoline used by vanpoolers	\$7,750
Cost organic carbon for carpoolers	\$1,545		
Value of Organic compounds savings	\$5,061	Miles per gallon per carpool	24
		Cost per mile per carpool	\$0.14
Nitrogen Oxides emission per car per mile	0.0000013227	Total Capacity	2
Total Nitrogen Oxides emission for people in cars	3.3861120000	Cost per mile per carpooler	\$0.07
Cost per ton Nitrogen Oxides for cars	\$13,544	Cost of gasoline used by carpoolers	\$81,696
Nitrogen Oxides emission per CNG bus	0.0000165346		
Total Capacity	40	Fuel benefit	\$69,064
Nitrogen Oxides emission per CNG	0.0000004134	Life of project	30
Total organic carbon emission for CNG bus	0.0634928640	Total fuel benefit	\$2,071,926
Cost per ton Nitrogen Oxides for CNG rider	\$253.97		
Nitrogen Oxides emission per CD bus	0.0000352739	Discount rate	3%
Total Capacity	40	Present value of fuel savings	\$1,353,689
Nitrogen Oxides emission per CD rider	0.0000008818		
Total Nitrogen Oxides emission for CD bus	0.5418071040		
Cost per ton Nitrogen Oxides for CD rider	\$2,167.23		
Nitrogen Oxides per vanpool	0.0000229280		
Nitrogen Oxides per vanpooler	0.0000019107		
Total Nitrogen Oxides for vanpoolers	1.1739136000		
Cost Nitrogen Oxides for vanpoolers	\$4,696		
Nitrogen Oxides per carpool	0.0000012000		
Nitrogen Oxides per carpooler	0.0000006000		
Total Nitrogen Oxides per carpooler	0.7065600000		
Cost Nitrogen Oxides for carpoolers	\$2,826		
Value of Nitrogen Oxides savings	\$3,601		
Particulate matter emission per car per mile	0.0000055116		
Total Particulate Matter emission for cars	14.109696		
Cost per ton Particulate Matter for cars	\$2,370.429		
Particulate Matter emission per CNG bus	0.0000059524		
Total Capacity	40		
Particulate matter emission per CNG	0.0000001488		
Total organic carbon emission for CNG bus	0.0228571429		
Cost per ton Particulate Matter for CNG rider	\$3,840		
Particulate Matter emission per CD bus	0.0000000154		
Total Capacity	40		
Particulate Matter emission per CD rider	0.0000000004		
Total Particulate Matter emission for CD bus	0.0002365440		
Cost per ton Particulate Matter for CD rider	\$40		
Particulate Matter per vanpool	0.0000055116		
Particulate Matter per vanpooler	0.0000004593		
Total Particulate Matter for vanpoolers	0.2821939200		
Cost Particulate Matter for vanpoolers	\$47,409		

Particulate Matter per carpool	0.000000002
Particulate Matter per carpooler	0.000000001
Total Particulate Matter for carpoolers	0.0001177600
Cost Particulate Matter for carpoolers	\$20
Value of Particulate Matter savings	\$2,319,121
Carbon Dioxide emission per car per mile	0.0004580000
Total Carbon Dioxide emission for people in cars	1172.4800000000
Cost per ton Carbon Dioxide for cars	\$2,345
Carbon Dioxide emission per CNG bus	0.5000000000
Total Capacity	40
Carbon Dioxide emission per CNG rider	0.0125000000
Total Carbon Dioxide emission for CNG bus	1920
Cost per ton Carbon Dioxide for CNG rider	\$3,840
Carbon Dioxide emission per CD bus	0.0000029762
Total Capacity	40
Carbon Dioxide emission per CD rider	0.000000744
Total Carbon Dioxide emission for CD bus	0.045714432
Cost per ton Carbon Dioxide for CD rider	\$0
Carbon Dioxide per vanpool	0.0005750000
Carbon Dioxide per vanpooler	0.0000479167
Total Carbon Dioxide for vanpoolers	29.4400000000
Cost Carbon Dioxide for vanpoolers	\$59
Carbon Dioxide per carpool	0.0004580000
Carbon Dioxide per carpooler	0.0002290000
Total Carbon Dioxide for carpoolers	270
Cost Carbon Dioxide for carpoolers	\$539
Value of Carbon Dioxide savings	-\$2,093
Pollution benefit	\$2,325,690
Life of project	30
Total pollution benefit	\$69,770,702
Discount rate	3%
Present value of pollution savings	\$45,584,551

VRT TIGER GRANT COST/BENEFIT ANALYSIS

III. Canyon County Operations Facility

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$1,250,000	\$1,251,421	\$1,421					X	\$556,522	X	\$694,899				

# short term jobs created/preserved	14	Project cost	\$1,250,000
average wage per short term job	\$20	General funds percentage	20%
Length of short term job	1	General funds benefit	\$250,000
		Life of project	30
Total community enhancement benefit	\$556,522	Annual \$ general funds benefit	\$8,333
		ValleyRide annual lease \$	\$44,766
		Life of project	30
		Lease savings	\$1,342,980
		ValleyRide annual energy \$	\$9,667
		LEED building energy savings	30%
		LEED building energy savings	\$2,900
		Life of project	30
		Energy savings	\$87,003
		General funds benefit	\$1,679,983
		Discount rate	7%
		Present value lease savings	\$555,503
		Present value energy savings	\$35,987
		Present value general funds benefit	\$103,409
		Total present value general funds benefit	\$694,899

VRT TIGER GRANT COST/BENEFIT ANALYSIS

III. Canyon County Operations Facility

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$1,250,000	\$1,654,135	\$404,135					X	\$556,522	X	\$1,097,614				

# short term jobs created/preserved	14	Project cost	\$1,250,000
average wage per short term job	\$20	General funds percentage	20%
Length of short term job	1	General funds benefit	\$250,000
		Life of project	30
Total community enhancement benefit	\$556,522	Annual \$ general funds benefit	\$8,333
		ValleyRide annual lease \$	\$44,766
		Life of project	30
		Lease savings	\$1,342,980
		ValleyRide annual energy \$	\$9,667
		LEED building energy savings	30%
		LEED building energy savings	\$2,900
		Life of project	30
		Energy savings	\$87,003
		General funds benefit	\$1,679,983
		Discount rate	3%
		Present value lease savings	\$877,433
		Present value energy savings	\$56,843
		Present value general funds benefit	\$163,337
		Total present value general funds benefit	\$1,097,614

VRT TIGER GRANT COST/BENEFIT ANALYSIS

IV. Ada County CNG Facility Upgrade

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$600,000	\$331,657	-\$268,343					X	\$267,130	X	\$49,636	X		X	\$14,891

# short term jobs created/preserved	7	Project cost	\$600,000
average wage per short term job	\$20	General funds percentage	20%
Length of short term job	1	General funds benefit	\$120,000
\$ of short term job	\$267,130	Life of project	30
		Annual general funds benefit	\$4,000
Total community enhancement benefit	\$267,130		
		Discount rate	7%
		Present value of general funds benefit	\$49,636

Annual cost to maintain equipment	\$6,000
Projected annual cost to maintain equipment	20%
\$ savings to maintain equipment	\$1,200
Life of project	30
Total maintenance benefit	\$36,000
Discount rate	7%
Present value of maintenance benefit	\$14,891

VRT TIGER GRANT COST/BENEFIT ANALYSIS

IV. Ada County CNG Facility Upgrade

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$600,000	\$369,053	-\$230,947					X	\$267,130	X	\$78,402	X		X	\$23,521

# short term jobs created/preserved	7	Project cost	\$600,000
average wage per short term job	\$20	General funds percentage	20%
Length of short term job	1	General funds benefit	\$120,000
\$ of short term job	\$267,130	Life of project	30
		Annual general funds benefit	\$4,000
Total community enhancement benefit	\$267,130		
		Discount rate	3%
		Present value of general funds benefit	\$78,401.77

Annual cost to maintain equipment	\$6,000
Projected annual cost to maintain equipment	20%
\$ savings to maintain equipment	\$1,200
Life of project	30
Total maintenance benefit	\$36,000
Discount rate	3%
Present value of maintenance benefit	\$23,521

VRT TIGER GRANT COST/BENEFIT ANALYSIS

V. VRT/COMPASS Operations Center

Cost	Total Cost/Benefit Benefit	Cost/Benefit	Pollution Savings Benefit	Pollution Savings \$ Amount	Fuel Savings Rider \$ Value Benefit	Fuel Savings Rider \$ Amount	Community Enhancement Benefit	Community Enhancement \$ Amount	General Funds \$ Savings Benefit	General Funds \$ Savings \$ Amount	Safety Benefit	Safety \$ Amount	Maintenance \$ Benefit	Maintenance \$ \$ Amount
\$1,296,000	\$2,736,238	\$1,440,238					X	\$577,002	X	\$2,159,236				

# short term jobs created/preserved	14	Project cost	\$1,296,000
average wage per short term job	\$20	General funds percentage	20%
Length of short term job	1	General funds benefit	\$259,200
\$ of short term job	\$577,002	Life of project	30
		Annual general funds benefit	\$8,640
Total community enhancement benefit	\$577,002		
		VRT annual lease \$	\$66,120
		COMPASS annual lease \$	\$95,265
		Total annual lease \$	\$161,385
		Life of project	30
		Lease savings	\$4,841,550
		VRT annual energy \$	\$2,767
		COMPASS annual energy \$	\$10,500
		Total annual energy \$	\$13,267
		LEED building energy savings	30%
		LEED building energy savings	\$3,980
		Life of project	30
		Energy savings	\$119,403
		General funds benefit	\$5,220,153
		Discount rate	7%
		Present value of general funds benefit	\$107,214
		Present value lease savings	\$2,002,633
		Present value energy savings	\$49,389
		Total present value general funds	\$2,159,236

VRT TIGER GRANT COST/BENEFIT ANALYSIS

V. VRT/COMPASS Operations Center

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$1,296,000	\$3,987,578	\$2,691,578					X	\$577,002	X	\$3,410,577				

# short term jobs created/preserved	14	Project cost	\$1,296,000
average wage per short term job	\$20	General funds percentage	20%
Length of short term job	1	General funds benefit	\$259,200
\$ of short term job	\$577,002	Life of project	30
		Annual general funds benefit	\$8,640
Total community enhancement benefit	\$577,002		
		VRT annual lease \$	\$66,120
		COMPASS annual lease \$	\$95,265
		Total annual lease \$	\$161,385
		Life of project	30
		Lease savings	\$4,841,550
		VRT annual energy \$	\$2,767
		COMPASS annual energy \$	\$10,500
		Total annual energy \$	\$13,267
		LEED building energy savings	30%
		LEED building energy savings	\$3,980
		Life of project	30
		Energy savings	\$119,403
		General funds benefit	\$5,220,153
		Discount rate	3%
		Present value of general funds benefit	\$169,348
		Present value of lease savings	\$3,163,217
		Present value of energy savings	\$78,012
		Present value of total general funds savings	\$3,410,577

VRT TIGER GRANT COST/BENEFIT ANALYSIS

VI. Canyon County Bus Replacement

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$2,521,544	\$2,938,236	\$416,692	X	\$34,831			X	\$1,122,635	X	\$1,570,580			X	\$210,190

# of replacement buses	15
Total miles per day for replacement buses	1958
Commute days per year	256
Organic compounds per mile for diesel bus	0.000000364
Total Organic compounds for diesel buses	0.0182444463
\$ organic compounds diesel buses	\$31.02
Organic compounds per mile for CD bus	0.000000005
Total Organic compounds per mile for CD replacement	0.0002506105
\$ Organic compounds CD emission savings	\$0.43
Total savings \$ organic compounds	\$31
Nitrogen oxides per mile for diesel bus	0.0000330693
Total Nitrogen oxides per mile for diesel bus	16.5750293558
\$ Nitrogen oxides diesel buses	\$66,300
Nitrogen oxides per mile for CD bus	0.0000352739
Total Nitrogen oxides per mile for CD bus	17.6800212884
\$ Nitrogen oxides CD emission savings	\$70,720
Total savings \$ nitrogen oxide	-\$4,420
Particulate matter per mile for diesel bus	0.0000001312
Total Particulate matter per mile for diesel bus	0.0657602021
\$ Particulate matter diesel buses	\$11,048
Particulate matter per mile for CD bus	0.0000000154
Total Particulate matter per mile for CD bus	0.0077188042
\$ Particulate matter CD emission savings	\$1,297
Total savings \$ Particulate matter	\$9,751
Carbon dioxide per mile for diesel bus	0.0000025000
Total Carbon dioxide per mile for diesel bus	1.2530526316
\$ Carbon dioxide diesel buses	\$3

# short term jobs created/preserved	27
average wage per short term job	\$20
Length of short term job	1
Total community enhancement benefit	\$1,122,635
Project cost	\$2,521,544
Cost of 20 passenger buses	\$1,100,000
Cost of 40 passenger buses	\$1,421,544
General funds percentage	20%
Total general funds benefit 20 passenger buses	\$220,000
Life of project 20 passenger buses	8
Annual general funds benefit 20 passenger buses	\$27,500
Total general funds benefit 40 passenger buses	\$284,309
Life of project 40 passenger buses	12
Annual general funds benefit 40 passenger buses	\$23,692
\$ lease 40 passenger bus	\$50,000
# of buses	3
Total lease cost per year	\$150,000
Life of project	12
Total \$ lease 40 passenger bus	\$1,800,000
\$ purchase 40 passenger buses	\$1,200,000
\$ savings 40 passenger buses	\$600,000
Annual \$ savings 40 passenger buses	\$50,000
\$ lease 20 passenger bus	\$25,000
# of buses	11
Life of project	8
Total lease \$ per 20 passenger buses	\$2,200,000
\$ purchase 20 passenger buses	\$1,100,000
\$ savings 20 passenger buses	\$1,100,000
Annual \$ savings 20 passenger buses	\$137,500
Total general funds benefit	\$2,204,309
Discount rate	7%
Present value of general benefit 20 passenger	\$164,211
Present value of general benefit 40 passenger buses	\$188,181
Present value of lease 20 passenger buses	\$821,054
Present value of lease 40 passenger buses	\$397,134

Annual maintenance \$ on old 40 passenger buses	\$86,614
Estimated % savings on maintenance \$ for 40 passenger buses	20%
Total annual maintenance \$ for new 40 passenger buses	\$69,291
Maintenance \$ savings for 40 passenger buses	\$17,323
Life of project	12
Total maintenance benefit for 40 passenger buses	\$207,874
Annual maintenance \$ on old 20 passenger	\$60,791
Estimated % savings on maintenance \$ for 20 passenger buses	20%
Total annual maintenance \$ for new 20 passenger buses	\$48,633
Maintenance \$ savings for 20 passenger bus	\$12,158
Life of project	8
Total maintenance benefit	\$97,266
Total maintenance benefit	\$305,139
Discount rate	7%
Present value maintenance for 40 passenger buses	\$137,590
Present value maintenance for 20 passenger buses	\$72,600
Total present value maintenance	\$210,190

Carbon dioxide per mile for CD bus	0.0000029762
Total Carbon dioxide per mile for CD bus	1.4917340968
\$ Carbon dioxide CD emission savings	\$3
Total savings \$ Carbon dioxide	\$0
Total annual pollution benefit	\$5,361
Life of project 20 passenger buses	8
# of 20 passenger buses	11
Annual pollution benefit 20 passenger buses	\$3,931
Total pollution benefit 20 passenger buses	\$31,452
# 40 passenger buses	4
Life of project 40 passenger buses	12
Annual pollution benefit 40 passenger buses	\$1,430
Pollution benefit 40 passenger buses	\$17,156
Total pollution benefit	\$48,607
Discount rate	7%
Present value of pollution benefit 20 passenger buses	\$23,476
Present value of pollution benefit 40 passenger buses	\$11,355
Present value total pollution benefit	\$34,831

Total present value general funds benefit	\$1,570,580
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VRT TIGER GRANT COST/BENEFIT ANALYSIS

VI. Canyon County Bus Replacement

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$2,521,544	\$3,314,025	\$792,481	X	\$41,828			X	\$1,122,635	X	\$1,891,784			X	\$257,778

# of replacement buses	15
Total miles per day for replacement buses	1958
Commute days per year	256
Organic compounds per mile for diesel bus	0.000000364
Total Organic compounds for diesel buses	0.018244463
\$ organic compounds diesel buses	\$31.02
Organic compounds per mile for CD bus	0.000000005
Total Organic compounds per mile for CD replacement	0.0002506105
\$ Organic compounds CD emission savings	\$0.43
Total savings \$ organic compounds	\$31
Nitrogen oxides per mile for diesel bus	0.0000330693
Total Nitrogen oxides per mile for diesel bus	16.5750293558
\$ Nitrogen oxides diesel buses	\$66,300
Nitrogen oxides per mile for CD bus	0.0000352739
Total Nitrogen oxides per mile for CD bus	17.6800212884
\$ Nitrogen oxides CD emission savings	\$70,720
Total savings \$ nitrogen oxide	-\$4,420
Particulate matter per mile for diesel bus	0.0000001312
Total Particulate matter per mile for diesel bus	0.0657602021
\$ Particulate matter diesel buses	\$11,048
Particulate matter per mile for CD bus	0.0000000154
Total Particulate matter per mile for CD bus	0.0077188042
\$ Particulate matter CD emission savings	\$1,297
Total savings \$ Particulate matter	\$9,751
Carbon dioxide per mile for diesel bus	0.0000025000
Total Carbon dioxide per mile for diesel bus	1.2530526316
\$ Carbon dioxide diesel buses	\$3

# short term jobs created/preserved	27
average wage per short term job	\$20
Length of short term job	1
Total community enhancement benefit	\$1,122,635
Project cost	\$2,521,544
Cost of 20 passenger buses	\$1,100,000
Cost of 40 passenger buses	\$1,421,544
General funds percentage	20%
Total general funds benefit 20 passenger buses	\$220,000
Life of project 20 passenger buses	8
Annual general funds benefit 20 passenger buses	\$27,500
Total general funds benefit 40 passenger buses	\$284,309
Life of project 40 passenger buses	12
Annual general funds benefit 40 passenger buses	\$23,692
\$ lease 40 passenger bus	\$50,000
# of buses	3
Total lease cost per year	\$150,000
Life of project	12
Total \$ lease 40 passenger bus	\$1,800,000
\$ purchase 40 passenger buses	\$1,200,000
\$ savings 40 passenger buses	\$600,000
Annual \$ savings 40 passenger buses	\$50,000
\$ lease 20 passenger bus	\$25,000
# of buses	11
Life of project	8
Total lease \$ per 20 passenger buses	\$2,200,000
\$ purchase 20 passenger buses	\$1,100,000
\$ savings 20 passenger buses	\$1,100,000
Annual \$ savings 20 passenger buses	\$137,500
Total general funds benefit	\$2,204,309
Discount rate	3%
Present value of general benefit 20 passenger	\$193,042
Present value of general benefit 40 passenger buses	\$235,834
Present value of lease 20 passenger buses	\$965,208
Present value of lease 40 passenger buses	\$497,700

Annual maintenance \$ on old 40 passenger buses	\$86,614
Estimated % savings on maintenance \$ for 40 passenger buses	20%
Total annual maintenance \$ for new 40 passenger buses	\$69,291
Maintenance \$ savings for 40 passenger buses	\$17,323
Life of project	12
Total maintenance benefit for 40 passenger buses	\$207,874
Annual maintenance \$ on old 20 passenger	\$60,791
Estimated % savings on maintenance \$ for 20 passenger buses	20%
Total annual maintenance \$ for new 20 passenger buses	\$48,633
Maintenance \$ savings for 20 passenger bus	\$12,158
Life of project	8
Total maintenance benefit	\$97,266
Total maintenance benefit	\$305,139
Discount rate	3%
Present value maintenance for 40 passenger buses	\$172,431
Present value maintenance for 20 passenger buses	\$85,347
Total present value maintenance	\$257,778

Carbon dioxide per mile for CD bus	0.0000029762
Total Carbon dioxide per mile for CD bus	1.4917340968
\$ Carbon dioxide CD emission savings	\$3
Total savings \$ Carbon dioxide	\$0
Total annual pollution benefit	\$5,361
Life of project 20 passenger buses	8
# of 20 passenger buses	11
Annual pollution benefit 20 passenger buses	\$3,931
Total pollution benefit 20 passenger buses	\$31,452
# 40 passenger buses	4
Life of project 40 passenger buses	12
Annual pollution benefit 40 passenger buses	\$1,430
Pollution benefit 40 passenger buses	\$17,156
Total pollution benefit	\$48,607
Discount rate	3%
Present value of pollution benefit 20 passenger buses	\$27,598
Present value of pollution benefit 40 passenger buses	\$14,231
Present value total pollution benefit	\$41,828

Total present value general funds benefit	\$1,891,784
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VRT TIGER GRANT COST/BENEFIT ANALYSIS

VII. Ada County Bus Replacement

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$995,380	\$863,432	-\$131,948					X	\$443,160	X	\$267,203			X	\$153,069

# short term jobs created/preserved	11	Project cost	\$995,380
average wage per short term job	\$20	General funds percentage	20%
Length of short term job	1	Total general funds benefit	\$199,076
Total community enhancement benefit	\$443,160	Life of project	12
		Annual general funds benefit	\$16,590
		Lease cost per 40 passenger bus	\$50,000
		# of buses	2
		Total lease cost per year	\$100,000
		Life of project	12
		Total \$ lease	\$1,200,000
		Total saving \$ lease	\$204,620
		Annual savings \$ lease	\$17,052
		Discount rate	7%
		Present value for general funds	\$131,767
		Present value for lease	\$135,436
		Total present value for general funds benefit	\$267,203

Annual maintenance \$ on old buses	\$1,782,632
# of buses in fleet	37
Annual maintenance \$ per bus	\$48,179
# Replacement buses	2
Annual maintenance \$ for replacement buses	\$96,358
Estimated % savings on maintenance \$ for replacement	20%
Annual maintenance \$ for new buses	\$77,087
Maintenance \$ savings for 40 passenger buses	\$19,272
Life of project	12
Total maintenance benefit	\$231,260
Discount rate	7%
Present value maintenance benefit	\$153,069

VRT TIGER GRANT COST/BENEFIT ANALYSIS

VII. Ada County Bus Replacement

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$995,380	\$969,857	\$25,523					X	\$443,160	X	\$334,866			X	\$191,831

# short term jobs created/preserved	11	Project cost	\$995,380
average wage per short term job	\$20	General funds percentage	20%
Length of short term job	1	Total general funds benefit	\$199,076
Total community enhancement benefit	\$443,160	Life of project	12
		Annual general funds benefit	\$16,590
		Lease cost per 40 passenger bus	\$50,000
		# of buses	2
		Total lease cost per year	\$100,000
		Life of project	12
		Total \$ lease	\$1,200,000
		Total saving \$ lease	\$204,620
		Annual savings \$ lease	\$17,052
		Discount rate	3%
		Present value for general funds	\$165,134
		Present value for lease	\$169,732
		Total present value for general funds benefit	\$334,866

Annual maintenance \$ on old buses	\$1,782,632
# of buses in fleet	37
Annual maintenance \$ per bus	\$48,179
# Replacement buses	2
Annual maintenance \$ for replacement buses	\$96,358
Estimated % savings on maintenance \$ for replacement	20%
Annual maintenance \$ for new buses	\$77,087
Maintenance \$ savings for 40 passenger buses	\$19,272
Life of project	12
Total maintenance benefit	\$231,260
Discount rate	3%
Present value maintenance benefit	\$191,831

VRT TIGER GRANT COST/BENEFIT ANALYSIS

VIII. Ustick Pilot Project

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$950,000	\$8,964,214	\$8,014,214	X	\$7,590,507	X	\$619,565	X	\$1,201,946	X	\$171,762				

# of bus passengers	587	# of bus passengers	587	# of bus passengers	587	Project cost	\$950,000
Average round trip length	30	Average round trip length	30	Average commute time	0.75	General funds percentage	20%
Commute days per year	256	Commute days per year	256	Commute days per year	256	Total general funds benefit	\$190,000
		Total miles	4508160	Total time not spent driving	56304	Life of project	2
Organic compounds emission per car per year	0.0000015432			\$ hours travel time savings	\$10.60	Annual general funds benefit	\$95,000
Organic compounds emission for people in area	6.9569925120	Miles per gallon car	24	Annual \$ time not driving benefit	\$596,822		
Cost Organic compounds for cars	\$11,827	\$ fuel for car driver	\$625,507	Life of project	2	Discount rate	7%
				Value of time not spent driving	\$1,193,645	Present value general funds benefit	\$171,762
Organic compounds emission per CNG bus	0.0000014330	Miles per gallon CNG bus	2.5095				
Total organic carbon emission for CNG bus	0.0110054400	\$ fuel for CNG bus passenger	\$282,831	# long term jobs created/preserved	2		
Cost per ton Organic compounds for CNG rider	\$19			average wage per long term job	\$15		
\$ Organic Compound benefit	\$11,808	Annual passenger fuel benefit	\$342,677	Length of long term job	2		
		Life of project	2	\$ of long term job	\$122,880		
Nitrogen Oxides emission per car per year	0.0000013227	Total passenger fuel benefit	\$685,353				
Nitrogen Oxides emission for people in area	5.9629432320			Discount rate	7%		
Cost per ton Nitrogen Oxides for cars	\$23,852	Discount rate	7%	Present value time not spent driving	\$1,079,066		
Nitrogen Oxides emission per CNG bus	0.0000165346	Present value fuel savings benefit	\$619,565	Total community enhancement benefit	\$1,201,946		
Total organic carbon emission for CNG bus	0.1269857280						
Cost per ton Nitrogen Oxides for CNG bus	\$507.94						
Value of Nitrogen Oxides savings	\$23,344						
Particulate matter emission per car per year	0.0000055116						
Total Particulate matter emission for people in area	24.84717466						
Cost per ton Particulate Matter for cars	\$4,174,325						
Particulate Matter emission per CNG bus	0.0000059524						
Total particulate matter emission for CNG bus	0.0457142857						
Cost per ton Particulate Matter for CNG rider	\$7,680						
Value of Particulate Matter savings	\$4,166,645						
Carbon Dioxide emission per car per year	0.0004580000						
Total Carbon Dioxide emission for people in area	2064.7372800000						
Cost per ton Carbon Dioxide for cars	\$4,129						
Carbon Dioxide emission per CNG bus	0.5000000000						
Total Carbon Dioxide emission for CNG bus	3840						
Cost per ton Carbon Dioxide for CNG rider	\$7,680						
Value of Carbon Dioxide savings	-\$3,551						
Pollution benefit	\$4,198,247						
Life of project	2						
Total pollution benefit	\$8,396,494						
Discount rate	7%						
Present value pollution benefit	\$7,590,507						

VRT TIGER GRANT COST/BENEFIT ANALYSIS

VIII. Ustick Pilot Project

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$950,000	\$10,135,580	\$9,185,580	X	\$8,033,218	X	\$655,701	X	\$1,264,882	X	\$181,780				

# of bus passengers	587	# of bus passengers	587	# of bus passengers	587	Project cost	\$950,000
Average round trip length	30	Average round trip length	30	Average commute time	0.75	General funds percentage	20%
Commute days per year	256	Commute days per year	256	Commute days per year	256	Total general funds benefit	\$190,000
		Total miles	4508160	Total time not spent driving	56304	Life of project	2
Organic compounds emission per car per year	0.0000015432			\$ hours travel time savings	\$10.60	Annual general funds benefit	\$95,000
Organic compounds emission for people in area	6.9569925120	Miles per gallon car	24	Annual \$ time not driving benefit	\$596,822		
Cost Organic compounds for cars	\$11,827	\$ fuel for car driver	\$625,507	Life of project	2	Discount rate	3%
				Value of time not spent driving	\$1,193,645	Present value general funds benefit	\$181,780
Organic compounds emission per CNG bus	0.0000014330	Miles per gallon CNG bus	2.5095				
Total organic carbon emission for CNG bus	0.0110054400	\$ fuel for CNG bus passenger	\$282,831	# long term jobs created/preserved	2		
Cost per ton Organic compounds for CNG rider	\$19			average wage per long term job	\$15		
\$ Organic Compound benefit	\$11,808	Annual passenger fuel benefit	\$342,677	Length of long term job	2		
		Life of project	2	\$ of long term job	\$122,880		
Nitrogen Oxides emission per car per year	0.0000013227	Total passenger fuel benefit	\$685,353				
Nitrogen Oxides emission for people in area	5.9629432320			Discount rate	3%		
Cost per ton Nitrogen Oxides for cars	\$23,852	Discount rate	3%	Present value time not spent driving	\$1,142,002		
Nitrogen Oxides emission per CNG bus	0.0000165346	Present value fuel savings benefit	\$655,701	Total community enhancement benefit	\$1,264,882		
Total organic carbon emission for CNG bus	0.1269857280						
Cost per ton Nitrogen Oxides for CNG bus	\$507.94						
Value of Nitrogen Oxides savings	\$23,344						
Particulate matter emission per car per year	0.0000055116						
Total Particulate matter emission for people in area	24.84717466						
Cost per ton Particulate Matter for cars	\$4,174,325						
Particulate Matter emission per CNG bus	0.0000059524						
Total particulate matter emission for CNG bus	0.0457142857						
Cost per ton Particulate Matter for CNG rider	\$7,680						
Value of Particulate Matter savings	\$4,166,645						
Carbon Dioxide emission per car per year	0.0004580000						
Total Carbon Dioxide emission for people in area	2064.7372800000						
Cost per ton Carbon Dioxide for cars	\$4,129						
Carbon Dioxide emission per CNG bus	0.5000000000						
Total Carbon Dioxide emission for CNG bus	3840						
Cost per ton Carbon Dioxide for CNG rider	\$7,680						
Value of Carbon Dioxide savings	-\$3,551						
Pollution benefit	\$4,198,247						
Life of project	2						
Total pollution benefit	\$8,396,494						
Discount rate	3%						
Present value pollution benefit	\$8,033,218						

VRT TIGER GRANT COST/BENEFIT ANALYSIS

IX. Garden City Pilot Project

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$450,000	\$5,450,877	\$5,000,877	X	\$4,394,034	X	\$288,497	X	\$686,985	X	\$81,361				

# of bus passengers	510	# of bus passengers	410	# of bus passengers	510	Project cost	\$450,000
Average round trip length	20	Average round trip length	20	Average commute time	0.5	General funds percentage	20%
Commute days per year	256	Commute days per year	256	Commute days per year	256	General funds benefit	\$90,000
		Total miles	2099200	Total time not spent driving	32640	Life of project	2
Organic compounds emission per car per year	0.0000015432			\$ hours travel time savings	\$10.60	Annual general funds benefit	\$45,000
Total Organic compounds emission for people in area	4.0296038400	Miles per gallon car	24	Annual \$ time not driving	\$345,984		
Cost Organic compounds for cars	\$6,850	\$ fuel for car driver	\$291,264	Life of project	2	Discount rate	7%
				Value of time not spent driving	\$691,968	Present value general funds benefit	\$81,361
Organic compounds emission per CNG bus	0.0000014330	Miles per gallon CNG bus	2.5095				
Total organic carbon emission for CNG bus	0.0073369600	\$ fuel for CNG bus passenger	\$131,699	# long term jobs created/preserved	1		
Cost per ton Organic compounds for CNG bus	\$12			average wage per long term job	\$15		
\$ Organic Compound benefit	\$6,838	Annual passenger fuel benefit	\$159,565	Length of long term job	2		
		Life of project	2	\$ of long term job	\$61,440		
Nitrogen Oxides emission per car per year	0.0000013227	Total passenger fuel benefit	\$319,131				
Total Nitrogen Oxides emission for people in area	3.4538342400			Total travel time benefit	\$753,408		
Cost per ton Nitrogen Oxides for cars	\$13,815	Discount rate	7%				
Nitrogen Oxides emission per CNG bus	0.0000165346	Present value passenger fuel benefit	\$288,497	Discount rate	7%		
Total organic carbon emission for CNG bus	0.0846571520			Present value time not driving	\$625,545		
Cost per ton Nitrogen Oxides for CNG rider	\$338.63			Total community enhancement benefit	\$686,985		
Value of Nitrogen Oxides savings	\$13,477						
Particulate matter emission per car per year	0.0000055116						
Total Particulate matter emission for people in area	14.39188992						
Cost per ton Particulate Matter for cars	\$2,417,838						
Particulate Matter emission per CNG bus	0.0000059524						
Total particulate matter emission for CNG bus	0.0304761905						
Cost per ton Particulate Matter for CNG rider	\$5,120						
Value of Particulate Matter savings	\$2,412,718						
Carbon Dioxide emission per car per year	0.0004580000						
Total Carbon Dioxide emission for people in area	1195.9296000000						
Cost per ton Carbon Dioxide for cars	\$2,392						
Carbon Dioxide emission per CNG bus	0.5000000000						
Total Carbon Dioxide emission for CNG bus	2560						
Cost per ton Carbon Dioxide for CNG bus	\$5,120						
Value of Carbon Dioxide savings	-\$2,728						
Pollution benefit	\$2,430,304						
Life of project	2						
Total pollution benefit	\$4,860,607.86						
Discount rate	7%						
Present value pollution benefit	\$4,394,034						

VRT TIGER GRANT COST/BENEFIT ANALYSIS

IX. Garden City Pilot Project

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$450,000	\$5,459,889	\$5,009,889	X	\$4,650,313	X	\$305,324	X	\$723,470	X	\$86,106				

# of bus passengers	510	# of bus passengers	410	# of bus passengers	510	Project cost	\$450,000
Average round trip length	20	Average round trip length	20	Average commute time	0.5	General funds percentage	20%
Commute days per year	256	Commute days per year	256	Commute days per year	256	General funds benefit	\$90,000
		Total miles	2099200	Total time not spent driving	32640	Life of project	2
Organic compounds emission per car per year	0.0000015432			\$ hours travel time savings	\$10.60	Annual general funds benefit	\$45,000
Organic compounds emission for people in area	4.0296038400	Miles per gallon car	24	Annual \$ time not driving	\$345,984		
Cost Organic compounds for cars	\$6,850	\$ fuel for car driver	\$291,264	Life of project	2	Discount rate	3%
				Value of time not spent driving	\$691,968	Present value general funds benefit	\$86,106
Organic compounds emission per CNG bus	0.0000014330	Miles per gallon CNG bus	2.5095				
Total organic carbon emission for CNG bus	0.0073369600	\$ fuel for CNG bus passenger	\$131,699	# long term jobs created/preserved	1		
Cost per ton Organic compounds for CNG bus	\$12			average wage per long term job	\$15		
\$ Organic Compound benefit	\$6,838	Annual passenger fuel benefit	\$159,565	Length of long term job	2		
		Life of project	2	\$ of long term job	\$61,440		
Nitrogen Oxides emission per car per year	0.0000013227	Total passenger fuel benefit	\$319,131				
Total Nitrogen Oxides emission for people in area	3.4538342400			Total travel time benefit	\$753,408		
Cost per ton Nitrogen Oxides for cars	\$13,815	Discount rate	3%				
Nitrogen Oxides emission per CNG bus	0.0000165346	Present value passenger fuel benefit	\$305,324	Discount rate	3%		
Total organic carbon emission for CNG bus	0.0846571520			Present value time not driving	\$662,030		
Cost per ton Nitrogen Oxides for CNG rider	\$338.63			Total community enhancement benefit	\$723,470		
Value of Nitrogen Oxides savings	\$13,477						
Particulate matter emission per car per year	0.0000055116						
Total Particulate matter emission for people in area	14.39188992						
Cost per ton Particulate Matter for cars	\$2,417,838						
Particulate Matter emission per CNG bus	0.0000059524						
Total particulate matter emission for CNG bus	0.0304761905						
Cost per ton Particulate Matter for CNG rider	\$5,120						
Value of Particulate Matter savings	\$2,412,718						
Carbon Dioxide emission per car per year	0.0004580000						
Total Carbon Dioxide emission for people in area	1195.9296000000						
Cost per ton Carbon Dioxide for cars	\$2,392						
Carbon Dioxide emission per CNG bus	0.5000000000						
Total Carbon Dioxide emission for CNG bus	2560						
Cost per ton Carbon Dioxide for CNG bus	\$5,120						
Value of Carbon Dioxide savings	-\$2,728						
Pollution benefit	\$2,430,304						
Life of project	2						
Total pollution benefit	\$4,860,607.86						
Discount rate	3%						
Present value pollution benefit	\$4,650,313						

VRT TIGER GRANT COST/BENEFIT ANALYSIS

X. Parma, Greenleaf, Wilder Pilot Project

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$326,136	\$1,003,529	\$677,393	X	\$4,150,906	X	\$294,374	X	\$650,189	X	\$58,966				

# of bus passengers	240	# of bus passengers	240	# of bus passengers	240	Project cost	\$326,136
Average round trip length	40	Average round trip length	40	Average commute time	1	General funds percentage	20%
Commute days per year	256	Commute days per year	256	Commute days per year	256	General funds benefit	\$65,227
		Total miles	2457600	Total time not spent driving	30720	Life of project	2
Organic compounds emission per car per mile	0.0000015432			\$ hours travel time savings	\$10.60	Annual general funds benefit	\$32,614
Total Organic compounds emission for people in area	3.7925683200	Miles per gallon car	24	Annual \$ time not driving	\$325,632		
Cost Organic compounds for cars	\$6,447	\$ fuel for car driver	\$340,992	Life of project	2	Discount rate	7%
				Value of time not spent driving	\$651,264	Present value general funds benefit	\$58,966
Organic compounds emission per CD bus	0.0000005512	Miles per gallon CD bus	2.9				
Total organic carbon emission for CD bus	0.0056442880	\$ fuel for CNG bus passenger	\$178,176	# long term jobs created/preserved	1		
Cost per ton Organic compounds for CD rider	\$10			average wage per long term job	\$15		
\$ Organic Compound benefit	\$6,438	Annual passenger fuel benefit	\$162,816	Length of long term job	2		
		Life of project	2	\$ of long term job	\$61,440		
Nitrogen Oxides emission per car per mile	0.0000013227	Total passenger fuel benefit	\$325,632				
Total Nitrogen Oxides emission for people in area	3.2506675200			Total travel time benefit	\$712,704		
Cost per ton Nitrogen Oxides for cars	\$13,003	Discount rate	7%				
Nitrogen Oxides emission per CD bus	0.0000352739	Present value passenger fuel benefit	\$294,374	Discount rate	7%		
Total organic carbon emission for CD bus	0.3612047360			Present value of time not driving	\$588,749		
Cost per ton Nitrogen Oxides for CD rider	\$1,444.82			Present value of community enhancement	\$650,189		
Value of Nitrogen Oxides savings	\$11,558						
Particulate matter emission per car per mile	0.0000055116						
Total Particulate matter emission for people in area	13.54530816						
Cost per ton Particulate Matter for cars	\$2,275,612						
Particulate Matter emission per CD bus	0.0000000154						
Total particulate matter emission for CD bus	0.0001576960						
Cost per ton Particulate Matter for CD rider	\$26						
Value of Particulate Matter savings	\$2,275,585						
Carbon Dioxide emission per car per mile	0.0004580000						
Total Carbon Dioxide emission for people in area	1125.5808000000						
Cost per ton Carbon Dioxide for cars	\$2,251						
Carbon Dioxide emission per CD bus	0.0000029762						
Total carbon dioxide emission for CD bus	0.030476288						
Cost per ton Carbon Dioxide for CD rider	\$0.06						
Value of Carbon Dioxide savings	\$2,251						
Pollution benefit	\$2,295,832						
Life of project	2						
Total pollution benefit	\$4,591,664						
Discount rate	7%						
Present value pollution savings	\$4,150,906						

VRT TIGER GRANT COST/BENEFIT ANALYSIS

X. Parma, Greenleaf, Wilder Pilot Project

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$326,136	\$5,451,481	\$5,125,345	X	\$4,393,005	X	\$311,543	X	\$684,527	X	\$62,405				

# of bus passengers	240	# of bus passengers	240	# of bus passengers	240	Project cost	\$326,136
Average round trip length	40	Average round trip length	40	Average commute time	1	General funds percentage	20%
Commute days per year	256	Commute days per year	256	Commute days per year	256	General funds benefit	\$65,227
		Total miles	2457600	Total time not spent driving	30720	Life of project	2
Organic compounds emission per car per mile	0.0000015432			\$ hours travel time savings	\$10.60	Annual general funds benefit	\$32,614
Total Organic compounds emission for people in area	3.7925683200	Miles per gallon car	24	Annual \$ time not driving	\$325,632		
Cost Organic compounds for cars	\$6,447	\$ fuel for car driver	\$340,992	Life of project	2	Discount rate	3%
				Value of time not spent driving	\$651,264	Present value general funds benefit	\$62,405
Organic compounds emission per CD bus	0.0000005512	Miles per gallon CD bus	2.9				
Total organic carbon emission for CD bus	0.0056442880	\$ fuel for CNG bus passenger	\$178,176	# long term jobs created/preserved	1		
Cost per ton Organic compounds for CD rider	\$10			average wage per long term job	\$15		
\$ Organic Compound benefit	\$6,438	Annual passenger fuel benefit	\$162,816	Length of long term job	2		
		Life of project	2	\$ of long term job	\$61,440		
Nitrogen Oxides emission per car per mile	0.0000013227	Total passenger fuel benefit	\$325,632				
Total Nitrogen Oxides emission for people in area	3.2506675200			Total travel time benefit	\$712,704		
Cost per ton Nitrogen Oxides for cars	\$13,003	Discount rate	3%				
Nitrogen Oxides emission per CD bus	0.0000352739	Present value passenger fuel benefit	\$311,543	Discount rate	3%		
Total organic carbon emission for CD bus	0.3612047360			Present value of time not driving	\$623,087		
Cost per ton Nitrogen Oxides for CD rider	\$1,444.82			Present value of community enhancement	\$684,527		
Value of Nitrogen Oxides savings	\$11,558						
Particulate matter emission per car per mile	0.0000055116						
Total Particulate matter emission for people in area	13.54530816						
Cost per ton Particulate Matter for cars	\$2,275,612						
Particulate Matter emission per CD bus	0.0000000154						
Total particulate matter emission for CD bus	0.0001576960						
Cost per ton Particulate Matter for CD rider	\$26						
Value of Particulate Matter savings	\$2,275,585						
Carbon Dioxide emission per car per mile	0.0004580000						
Total Carbon Dioxide emission for people in area	1125.5808000000						
Cost per ton Carbon Dioxide for cars	\$2,251						
Carbon Dioxide emission per CD bus	0.0000029762						
Total carbon dioxide emission for CD bus	0.030476288						
Cost per ton Carbon Dioxide for CD rider	\$0.06						
Value of Carbon Dioxide savings	\$2,251						
Pollution benefit	\$2,295,832						
Life of project	2						
Total pollution benefit	\$4,591,664						
Discount rate	3%						
Present value pollution benefit	\$4,393,005						

VRT TIGER GRANT COST/BENEFIT ANALYSIS

XI. Buses For Pilot Projects

Cost	Total Cost/Benefit Benefit	Cost/Benefit	Pollution Savings Benefit	Savings \$ Amount	Fuel Savings Rider \$ Value Benefit	\$ Amount	Community Enhancement Benefit	\$ Amount	General Funds \$ Savings Benefit	\$ Amount	Safety Benefit	\$ Amount	Maintenance \$ Benefit	\$ Amount
\$1,650,000	\$1,405,237	-\$244,763					X	\$734,609	X	\$670,628				

# short term jobs created/preserved	18	Project cost	\$1,650,000
average wage per short term job	\$20	Cost of 20 passenger buses	\$300,000
Length of short term job	1	Cost of 40 passenger buses	\$1,350,000
\$ of short term job	\$734,609	General funds percentage	20%
Total community enhancement benefit	\$734,609	Total general funds benefit 20 passenger buses	\$60,000
		Life of project 20 passenger buses	8
		Annual general funds benefit 20 passenger buses	\$7,500
		Total general funds benefit 40 passenger buses	\$270,000
		Life of project 40 passenger buses	12
		Annual general funds benefit 40 passenger buses	\$22,500
		Lease cost per 40 passenger bus	\$50,000
		# of buses	3
		Total lease cost per year	\$150,000
		Life of project	12
		Total \$ lease	\$1,800,000
		\$ purchase 40 passenger bus	\$1,350,000
		Annual \$ benefit for 40 passenger buses	\$37,500
		\$ benefit for 40 passenger buses	\$450,000
		Lease cost per bus for 20 passenger bus	\$25,000
		# of buses	2
		Total lease cost per year	\$50,000
		Life of project	8
		Total \$ lease	\$400,000
		\$ purchase 20 passenger bus	\$200,000
		Annual \$ benefit 20 passenger buses	\$25,000
		\$ benefit for 20 passenger buses	\$200,000
		Discount rate	7%
		Present value general funds 20 passenger buses	\$44,785
		Present value general funds 40 passenger buses	\$178,710
		Present value lease 20 passenger buses	\$149,282
		Present value lease 40 passenger buses	\$297,851
		Present value total general funds benefits	\$670,628

VRT TIGER GRANT COST/BENEFIT ANALYSIS

XI. Buses For Pilot Projects

Cost	Total Cost/Benefit Benefit	Cost/Benefit	Pollution Savings Benefit	Savings \$ Amount	Fuel Savings Rider \$ Value Benefit	\$ Amount	Community Enhancement Benefit	\$ Amount	General Funds \$ Savings Benefit	\$ Amount	Safety Benefit	\$ Amount	Maintenance \$ Benefit	\$ Amount
\$1,650,000	\$1,559,989	-\$90,011					X	\$734,609	X	\$825,380				

# short term jobs created/preserved	18	Project cost	\$1,650,000
average wage per short term job	\$20	Cost of 20 passenger buses	\$300,000
Length of short term job	1	Cost of 40 passenger buses	\$1,350,000
\$ of short term job	\$734,609	General funds percentage	20%
Total community enhancement benefit	\$734,609	Total general funds benefit 20 passenger buses	\$60,000
		Life of project 20 passenger buses	8
		Annual general funds benefit 20 passenger buses	\$7,500
		Total general funds benefit 40 passenger buses	\$270,000
		Life of project 40 passenger buses	12
		Annual general funds benefit 40 passenger buses	\$22,500
		Lease cost per 40 passenger bus	\$50,000
		# of buses	3
		Total lease cost per year	\$150,000
		Life of project	12
		Total \$ lease	\$1,800,000
		\$ purchase 40 passenger bus	\$1,350,000
		Annual \$ benefit for 40 passenger buses	\$37,500
		\$ benefit for 40 passenger buses	\$450,000
		Lease cost per bus for 20 passenger bus	\$25,000
		# of buses	2
		Total lease cost per year	\$50,000
		Life of project	8
		Total \$ lease	\$400,000
		\$ purchase 20 passenger bus	\$200,000
		Annual \$ benefit 20 passenger buses	\$25,000
		\$ benefit for 20 passenger buses	\$200,000
		Discount rate	3%
		Present value general funds 20 passenger buses	\$52,648
		Present value general funds 40 passenger buses	\$223,965
		Present value lease 20 passenger buses	\$175,492
		Present value lease 40 passenger buses	\$373,275
		Present value total general funds benefits	\$825,380

VRT TIGER GRANT COST/BENEFIT ANALYSIS

XII. High Capacity Alternatives Analysis:

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$5,500,000	\$6,381,540	\$881,540					X	\$5,387,130	X	\$994,410				

# short term jobs created/preserved	60	Project cost	\$5,500,000
average wage per short term job	\$22	General funds percentage	20%
Length of short term job	2	General funds benefit	\$1,100,000
\$ of short term job	\$5,387,130	Life of project	2
		Annual general funds benefit	\$550,000
Total community enhancement benefit	\$5,387,130		
		Discount rate	7%
		Present value general funds benefit	\$994,410

VRT TIGER GRANT COST/BENEFIT ANALYSIS

XII. High Capacity Alternatives Analysis:

Cost	Total Cost/Benefit		Pollution Savings		Fuel Savings Rider \$ Value		Community Enhancement		General Funds \$ Savings		Safety		Maintenance \$	
	Benefit	Cost/Benefit	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount	Benefit	\$ Amount
\$5,500,000	\$6,439,539	\$939,539					X	\$5,387,130	X	\$1,052,408				

# short term jobs created/preserved	60	Project cost	\$5,500,000
average wage per short term job	\$22	General funds percentage	20%
Length of short term job	2	General funds benefit	\$1,100,000
\$ of short term job	\$5,387,130	Life of project	2
		Annual general funds benefit	\$550,000
Total community enhancement benefit	\$5,387,130		
		Discount rate	3%
		Present value general funds benefit	\$1,052,408

Ustick Rd, Meridian Rd to Curtis Rd

Year	Accidents	Accidents w/ Injuries	Total Injuries	Accidents w/ Fatalities	Total Fatalities	Vehicle Units
2006	215	110	166	0	0	476
2007	231	85	138	0	0	484
2008	226	79	108	0	0	470
Average annual	224	91	137	0	0	477

\$ value of crashes

MAIS 1	109.87	\$1,318,400
MAIS 2	13.73	\$1,277,200
MAIS 3	6.87	\$2,369,000
MAIS 4	5.49	\$6,180,000
MAIS 5	1.37	\$6,283,000
MAIS 6	0.00	\$0
	<u>137</u>	<u>\$17,427,600</u> per year

	Distribution	Fraction of VSL	\$ value	VSL =	\$6,000,000
MAIS Level 1	Minor	0.8	0.002	\$12,000	
MAIS Level 2	Moderate	0.1	0.0155	\$93,000	
MAIS Level 3	Serious	0.05	0.0575	\$345,000	
MAIS Level 4	Severe	0.04	0.1875	\$1,125,000	
MAIS Level 5	Critical	0.01	0.7625	\$4,575,000	
MAIS Level 6	Fatal	= average # of fatalities	1	\$6,000,000	

State St, SH 55 to 9th St

Year	Accidents	Accidents w/ Injuries	Total Injuries	Accidents w/ Fatalities	Total Fatalities	Vehicle Units
2006	288	140	201	4	7	601
2007	332	125	185	1	1	700
2008	271	103	139	1	1	554
Average annual	297	123	175	2	3	618

\$ value of crashes

MAIS 1	140.00	\$1,680,000
MAIS 2	18.50	\$1,720,500
MAIS 3	6.95	\$2,397,750
MAIS 4	7.00	\$7,875,000
MAIS 5	1.75	\$8,006,250
MAIS 6	3.00	\$18,000,000
	<u>177.20</u>	<u>\$39,679,500</u> per year

I-84, Franklin Rd Interchange to Wye Interchange

Year	Accidents	Accidents w/ Injuries	Total Injuries	Accidents w/ Fatalities	Total Fatalities	Vehicle Units
2006	361	113	173	5	5	688
2007	479	144	194	1	1	914
2008	368	109	153	2	2	635
Average Annual	403	122	173	3	3	746

\$ value of crashes

MAIS 1	138.67	\$1,664,000
MAIS 2	17.33	\$1,612,000
MAIS 3	8.67	\$2,990,000
MAIS 4	6.93	\$7,800,000
MAIS 5	1.73	\$7,930,000
MAIS 6	2.67	\$16,000,000
	<u>176.00</u>	<u>\$37,996,000</u> per year

I-184, Wye Interchange to 13th St

Year	Accidents	Accidents w/ Injuries	Total Injuries	Accidents w/ Fatalities	Total Fatalities	Vehicle Units
2006	57	22	29	0	0	90
2007	50	16	30	0	0	81
2008	71	20	36	1	1	130
Average Annual	59	19	32	0	0	100

\$ value of crashes

MAIS 1	25.33	\$304,000
MAIS 2	3.17	\$294,500
MAIS 3	1.58	\$546,250
MAIS 4	1.27	\$1,425,000
MAIS 5	0.32	\$1,448,750
MAIS 6	0.33	\$2,000,000
	<u>32.00</u>	<u>\$6,018,500</u> per year

Chinden Blvd, Garden City City Limits

Year	Accidents	Accidents w/ Injuries	Total Injuries	Accidents w/ Fatalities	Total Fatalities	Vehicle Units
2006	150	68	82	1	1	312
2007	143	55	79	1	1	314

2008	147	41	56	0	0	307
Average Annual	147	55	72	1	1	311

\$ value of crashes

MAIS 1	57.87	\$694,400
MAIS 2	7.23	\$672,700
MAIS 3	3.62	\$1,247,750
MAIS 4	2.89	\$3,255,000
MAIS 5	0.72	\$3,309,250
MAIS 6	1	\$4,000,000
	<u>73</u>	<u>\$13,179,100</u> per year

Miles Traveled on Major East/West Corridors

	Trips	One Way Miles	Total Miles Per Year
Ustick	5256014	15	78840210
State	8014292	15	120214380
I-84	39032656	30	1170979680
I-184	23998000	15	359970000
Chinden	8639852	10	86398520
			<u>1,816,402,790</u>

Miles Reduced on Major East/West Corridors

	Trips	One Way Miles	Total Miles Per Year
Park & Rides	205200	20	4104000
Transit Facilities	64000	20	1280000
Ustick Pilot Project	150272	15	2254080
Garden City Pilot Project	130560	10	1305600
Parma, Greenleaf, Wilder Pilot Project	61440	20	1228800
			<u>10,172,480</u>

Total \$ value of crashes	\$101,121,600
Annual total miles traveled	1,816,402,790

Total miles reduced by capital projects	5,384,000
reduced by capital projects	0.30%
benefits capital projects	\$299,735
Life of capital projects	30
benefits capital projects	\$8,992,037

Total miles reduced by pilot projects	4,788,480
reduced by pilot projects	0.26%
\$ value of safety benefits pilot projects	\$266,581

Life of pilot projects	2
Total \$ safety benefit pilot projects	\$533,162

Discount rate	7%
safety benefit capital projects	\$3,719,419
safety benefit pilot projects	\$481,984
Total present value safety benefit	\$4,201,402

Ustick Rd, Meridian Rd to Curtis Rd

Year	Accidents	Accidents w/ Injuries	Total Injuries	Accidents w/ Fatalities	Total Fatalities	Vehicle Units
2006	215	110	166	0	0	476
2007	231	85	138	0	0	484
2008	226	79	108	0	0	470
Average annual	224	91	137	0	0	477

\$ value of crashes

MAIS 1	109.87	\$1,318,400
MAIS 2	13.73	\$1,277,200
MAIS 3	6.87	\$2,369,000
MAIS 4	5.49	\$6,180,000
MAIS 5	1.37	\$6,283,000
MAIS 6	0.00	\$0
	<u>137</u>	\$17,427,600 per year

	Distribution	Fraction of VSL	\$ value	VSL =	\$6,000,000
MAIS Level 1	Minor	0.8	0.002	\$12,000	
MAIS Level 2	Moderate	0.1	0.0155	\$93,000	
MAIS Level 3	Serious	0.05	0.0575	\$345,000	
MAIS Level 4	Severe	0.04	0.1875	\$1,125,000	
MAIS Level 5	Critical	0.01	0.7625	\$4,575,000	
MAIS Level 6	Fatal	= average # of fatalities	1	\$6,000,000	

State St, SH 55 to 9th St

Year	Accidents	Accidents w/ Injuries	Total Injuries	Accidents w/ Fatalities	Total Fatalities	Vehicle Units
2006	288	140	201	4	7	601
2007	332	125	185	1	1	700
2008	271	103	139	1	1	554
Average annual	297	123	175	2	3	618

\$ value of crashes

MAIS 1	140.00	\$1,680,000
MAIS 2	18.50	\$1,720,500
MAIS 3	6.95	\$2,397,750
MAIS 4	7.00	\$7,875,000
MAIS 5	1.75	\$8,006,250
MAIS 6	3.00	\$18,000,000
	<u>177.20</u>	\$39,679,500 per year

I-84, Franklin Rd Interchange to Wye Interchange

Year	Accidents	Accidents w/ Injuries	Total Injuries	Accidents w/ Fatalities	Total Fatalities	Vehicle Units
2006	361	113	173	5	5	688
2007	479	144	194	1	1	914
2008	368	109	153	2	2	635
Average Annual	403	122	173	3	3	746

\$ value of crashes

MAIS 1	138.67	\$1,664,000
MAIS 2	17.33	\$1,612,000
MAIS 3	8.67	\$2,990,000
MAIS 4	6.93	\$7,800,000
MAIS 5	1.73	\$7,930,000
MAIS 6	2.67	\$16,000,000
	<u>176.00</u>	\$37,996,000 per year

I-184, Wye Interchange to 13th St

Year	Accidents	Accidents w/ Injuries	Total Injuries	Accidents w/ Fatalities	Total Fatalities	Vehicle Units
2006	57	22	29	0	0	90
2007	50	16	30	0	0	81
2008	71	20	36	1	1	130
Average Annual	59	19	32	0	0	100

\$ value of crashes

MAIS 1	25.33	\$304,000
MAIS 2	3.17	\$294,500
MAIS 3	1.58	\$546,250
MAIS 4	1.27	\$1,425,000
MAIS 5	0.32	\$1,448,750
MAIS 6	0.33	\$2,000,000
	<u>32.00</u>	\$6,018,500 per year

Chinden Blvd, Garden City City Limits

Year	Accidents	Accidents w/ Injuries	Total Injuries	Accidents w/ Fatalities	Total Fatalities	Vehicle Units
2006	150	68	82	1	1	312
2007	143	55	79	1	1	314

2008	147	41	56	0	0	307
Average Annual	147	55	72	1	1	311

\$ value of crashes

MAIS 1	57.87	\$694,400
MAIS 2	7.23	\$672,700
MAIS 3	3.62	\$1,247,750
MAIS 4	2.89	\$3,255,000
MAIS 5	0.72	\$3,309,250
MAIS 6	1	\$4,000,000
	<u>73</u>	<u>\$13,179,100</u> per year

Miles Traveled on Major East/West Corridors

	Trips	One Way Miles	Total Miles Per Year
Ustick	5256014	15	78840210
State	8014292	15	120214380
I-84	39032656	30	1170979680
I-184	23998000	15	359970000
Chinden	8639852	10	86398520
			<u>1,816,402,790</u>

Miles Reduced on Major East/West Corridors

	Trips	One Way Miles	Total Miles Per Year
Park & Rides	205200	20	4104000
Transit Facilities	64000	20	1280000
Ustick Pilot Project	150272	15	2254080
Garden City Pilot Project	130560	10	1305600
Parma, Greenleaf, Wilder Pilot Project	61440	20	1228800
			<u>10,172,480</u>

Total \$ value of crashes	\$101,121,600
Annual total miles traveled	1,816,402,790

Total miles reduced by capital projects	5,384,000
reduced by capital projects	0.30%
benefits capital projects	\$299,735
Life of capital projects	30
benefits capital projects	\$8,992,037

Total miles reduced by pilot projects	4,788,480
reduced by pilot projects	0.26%
\$ value of safety benefits pilot projects	\$266,581

Life of pilot projects	2
Total \$ safety benefit pilot projects	\$533,162

Discount rate	3%
safety benefit capital projects	\$5,874,930
safety benefit pilot projects	\$510,095
Total present value safety benefit	\$6,385,025

Volatile Organic Compounds	\$1700/ton	http://www.nhtsa.dot.gov/staticfiles/DOT/NHTSA/Rulemaking/Rules/Associated%20Files/2006_FRIAPublic.pdf
Nitrogen Oxides	\$4,000/ton	http://www.nhtsa.dot.gov/staticfiles/DOT/NHTSA/Rulemaking/Rules/Associated%20Files/2006_FRIAPublic.pdf
Particulate Matter	\$168,000/ton	http://www.nhtsa.dot.gov/staticfiles/DOT/NHTSA/Rulemaking/Rules/Associated%20Files/2006_FRIAPublic.pdf
Carbon Dioxide	\$2/metric ton	http://www.nhtsa.dot.gov/staticfiles/DOT/NHTSA/Rulemaking/Rules/Associated%20Files/2006_FRIAPublic.pdf
Gasoline	\$3.33/gallon	http://www.eia.doe.gov/oiaf/aeo/supplement/index.html
Diesel	\$3.48/gallon	http://www.nhtsa.dot.gov/staticfiles/DOT/NHTSA/Ruelmaking/Rules/Associated%20Files/2006_FRIAPublic.pdf
CNG cost	.54 per therm	VRT data
1 therm = .80054948391 gallon		
Hourly value of personal time	\$10.60/hr	ref: http://ostpxweb.dot.gov/policy/Data/VOTrevision1_2-11-03.pdf
Hourly value of business time	\$21.20/hr	ref: http://ostpxweb.dot.gov/policy/Data/VOTrevision1_2-11-03.pdf
50% of HOV trip is free for personal use		Assumption
1 job per \$92,000		
Value of a Statistial Life (VSL)		6000000 ref: http://ostpxweb.dot.gov/policy/reports/VSL%20Guidance

MAIS Level	Severity	Fraction of VSL
MAIS 1	Minor	0.002
MAIS 2	Moderate	0.0155
MAIS 3	Serious	0.0575
MAIS 4	Severe	0.1875
MAIS 5	Critical	0.7625
MAIS 6	Fatal	1

Pollutant	Passenger Vehicle		
Volatile Organic Compounds	1.4 grams (g)/mile	http://www.fhwa.dot.gov/environment/aqfactbk/page15alt3.htm	EPA420-F-00-013, April 2000
Nitrogen Oxides	1.2 g/mile	http://www.fhwa.dot.gov/environment/aqfactbk/page15alt3.htm	EPA420-F-00-013, April 2000
Particulate Matter	5 g/mile	http://www.itd.idaho.gov/planning/cmaq/emission_reduction_spreadsheets_2008.xls	
Carbon Dioxide	.916 lb/mile	http://www.fhwa.dot.gov/environment/aqfactbk/page15alt3.htm	EPA420-F-00-013, April 2000

Pollutant	Light truck		
Volatile Organic Compounds	.9 g/mile	Ninth Diesel Engine Emissions Reduction Conference, August 2003	CNG and Diesel Transit Bus Emissions Review by California Environmental Protection Agency, Air Resource Board, Uiversity of California Davis Department of Environmental Toxicology

Data Sources

Nitrogen Oxides	20.8 g/mile	Ninth Diesel Engine Emissions Reduction Conference, August 2003	CNG and Diesel Transit Bus Emissions Review by California Environmental Protection Agency, Air Resource Board, University of California Davis Department of Environmental Toxicology
Particulate Matter	5 g/mile	http://www.itd.idaho.gov/planning/cmaq/emission_reduction_spreadsheets_2008.xls	
Carbon Dioxide	1.15 lb/mile	Ninth Diesel Engine Emissions Reduction Conference, August 2003	CNG and Diesel Transit Bus Emissions Review by California Environmental Protection Agency, Air Resource Board, University of California Davis Department of Environmental Toxicology

Pollutant	CNG Bus		
Volatile Organic Compounds	1.3 mG/Mile	Ninth Diesel Engine Emissions Reduction Conference, August 2003	CNG and Diesel Transit Bus Emissions Review by California Environmental Protection Agency, Air Resource Board, University of California Davis Department of Environmental Toxicology
Nitrogen Oxides	15 g/mile	Ninth Diesel Engine Emissions Reduction Conference, August 2003	CNG and Diesel Transit Bus Emissions Review by California Environmental Protection Agency, Air Resource Board, University of California Davis Department of Environmental Toxicology
Particulate Matter	20 mg/mile	Ninth Diesel Engine Emissions Reduction Conference, August 2003	CNG and Diesel Transit Bus Emissions Review by California Environmental Protection Agency, Air Resource Board, University of California Davis Department of Environmental Toxicology
Carbon Dioxide	2 g/mile	Ninth Diesel Engine Emissions Reduction Conference, August 2003	CNG and Diesel Transit Bus Emissions Review by California Environmental Protection Agency, Air Resource Board, University of California Davis Department of Environmental Toxicology

Pollutant	CD Bus		
Volatile Organic Compounds	.5 mG/mile	Ninth Diesel Engine Emissions Reduction Conference, August 2003	CNG and Diesel Transit Bus Emissions Review by California Environmental Protection Agency, Air Resource Board, University of California Davis Department of Environmental Toxicology
Nitrogen Oxides	32 g/mile	Ninth Diesel Engine Emissions Reduction Conference, August 2003	CNG and Diesel Transit Bus Emissions Review by California Environmental Protection Agency, Air Resource Board, University of California Davis Department of Environmental Toxicology
Particulate Matter	14 mg/mile	Ninth Diesel Engine Emissions Reduction Conference, August 2003	CNG and Diesel Transit Bus Emissions Review by California Environmental Protection Agency, Air Resource Board, University of California Davis Department of Environmental Toxicology
Carbon Dioxide	2.7 g/mile	Ninth Diesel Engine Emissions Reduction Conference, August 2003	CNG and Diesel Transit Bus Emissions Review by California Environmental Protection Agency, Air Resource Board, University of California Davis Department of Environmental Toxicology

Pollutant	Diesel Bus		
Volatile Organic Compounds	33mg/mile	Ninth Diesel Engine Emissions Reduction Conference, August 2003	CNG and Diesel Transit Bus Emissions Review by California Environmental Protection Agency, Air Resource Board, University of California Davis Department of Environmental Toxicology
Nitrogen Oxides	30 g/mile	Ninth Diesel Engine Emissions Reduction Conference, August 2003	CNG and Diesel Transit Bus Emissions Review by California Environmental Protection Agency, Air Resource Board, University of California Davis Department of Environmental Toxicology
Particulate Matter	119 mg/mile	Ninth Diesel Engine Emissions Reduction Conference, August 2003	CNG and Diesel Transit Bus Emissions Review by California Environmental Protection Agency, Air Resource Board, University of California Davis Department of Environmental Toxicology
Carbon Dioxide	2.5 g/mile	Ninth Diesel Engine Emissions Reduction Conference, August 2003	CNG and Diesel Transit Bus Emissions Review by California Environmental Protection Agency, Air Resource Board, University of California Davis Department of Environmental Toxicology

Average wage per short term job	\$20	Job search website
Average wage per long term job	\$15	VRT wage schedule

Canyon County building lease	\$44766 year	VRT financial data
Canyon County energy costs	\$9667 year	VRT financial data
VRT Administration Office building lease	\$66120 year	VRT financial data
VRT Administration Office energy costs	\$2767 year	VRT financial data
COMPASS building lease	\$95265 year	COMPASS financial data
COMPASS energy costs	\$10500 year	COMPASS financial data

Ada County fleet maintenance	\$1,782,632 year	VRT Fleetnet data
Ada County fleet	37 vehicles	VRT Fleetnet data
Canyon County 20 pasenger bus maintenance	\$60,791 per year	VRT Fleetnet data

Data Sources

Canyon County 20 pasenger bus fleet	11 vehicles	VRT Fleetnet data
Canyon County 40 passenger bus maintenance	\$86,614 year	VRT Fleetnet data
Canyon County 40 passenger bus fleet	8 vehicle	VRT Fleetnet data
Canyon County fleet miles	2,480 miles/day	VRT Fleetnet data
Ada County fleet miles	5,098 miles/day	VRT Fleetnet data
Ada County CNG miles per gallon		3.84 VRT Fleetnet data
Canyon County 20 passenger gas bus miles per gallon		7.4 VRT Fleetnet data
Canyon County 20 passenger diesel bus miles per gallon		9.7 VRT Fleetnet data
Canyon County 40 passenger diesel bus miles per gallon		5.4 VRT Fleetnet data
New CNG bus miles per gallon	4 mpg	http://egpnews.com/?p=2590
New clean diesel bus miles per gallon	2.9 mpg	Metropolitan Transit System
Diesel bus miles per gallon	4 mpg	http://www.fta.dot.gov/documents/FTA-AlternativeFuelsInPublicTransit.pdf
Job creation	1 job per \$92,000	www.dot.gov/recovery/ost/responses090828.htm